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Skin Diseases of the Dog associated with *Demodex folliculorum.**

By H. Raynor Hewetson, M.R.C.V.S., Southport.

The skin diseases of the dog nowadays take a prominent place amongst the cases of most veterinarians and, of these, the so-called follicular mange is probably one of the most perplexing. Clients, as well as cases, vary greatly, and it is difficult to arrive at the satisfactory termination of a case, in view of the patience and time required, to say nothing of possible disappointment.

I think I may safely assume that you are all familiar with the parasite under review and the symptoms associated with it, but it will doubtless be advantageous to outline a summary of the details.

Demodex folliculorum canis is a small ectozoan vermiform parasite, the adult measuring from ·2 to ·3 mm. in length. In the adult the cephalic thorax carries four pairs of short legs which appear like knobs on the margin, each leg consisting of three segments. There is no separation between the cephalic thorax and abdomen, the latter being finely transversely striated and tapering towards its posterior end.

Symptoms. These are usually described under two, sometimes three, heads, *viz.*:—(1) The squamous form, where the first noticeable signs are the falling off of hair, leaving bare or partially-denuded patches which show the skin pinkish or reddish underneath, and coated with fine flaky scales, gradually spreading over the entire body. (2) The pustular form, which usually commences on the face and limbs, particularly round the eyes and ears, spreading eventually over the whole body. In the early stages bare patches with a few pustules are the apparent symptoms, and as these increase the skin becomes thickened, corrugated and reddish-brown in colour. In this form I have seen two cases where the suppuration had progressed to such an extent that an area as large as the palm of the hand was entirely underrun, the covering skin being soft and spongy, and perforated by holes varying in size from a pin head to a small pea, through which pus, rich in demodectes, was continually oozing. The third form alluded to is the circinate, in which small squamous areas are combined with pustular edges.

Contrary to the generally-accepted statements, I have usually observed a fair amount of irritation and scratching in both forms, which I think we should be justified in expecting from the nature of the lesions, irrespective of the presence of a parasite.

Diagnosis. Before considering definite diagnosis, I would like you to reflect on the similarity of the symptoms, even though more severe in advanced cases, to those of various other skin diseases of the dog. Practically, we may say the disease is non-contagious. I have been able on several occasions to demonstrate the parasite on dogs whose skins were healthy and had not been known to have been previously affected. I have had cases where apparently a cure had been affected, certainly over a period of months, which still harboured the mite—and others, again, where very little progress in alleviating the symptoms had been made; repeated collections of material failed to produce a single specimen, which had been plentiful before treatment commenced.

These facts have considerably altered my ideas of the correctness of making a diagnosis of "follicular mange." The time is not long past when I considered that if one saw a dog presenting definite skin symptoms and that microscopically the demodex could be found, *ipso facto*, we had a case of follicular mange. Nowadays I would hesitate to say that follicular mange as a disease *per se*, really exists. Of course, we all know the dog which has a thickened, wrinkled, hairless skin, covered with scales and pustules, swarming with demodectes, and I think it would be foolish, in its case, to suggest not giving the parasite full credit for its share in the work of destruction, or that its eradication is not an indispensable part of the cure. On the other hand, when we consider the numerous failures of various scientists to transmit the disease by transmission of the parasite, its ability to live without creating lesions and the persistence of lesions after its apparent disappearance, I fail to see where we can draw the line of demarcation to say when a dog has follicular mange, or when it has, say, "eczema, aggravated by the presence of the follicular parasite," or merely that it is harbouring the parasite. In this connection, my experience has led me to believe that we cannot take a guide from the number of demodectes present, some very mild cases yielding copious numbers on a slide and some severe ones, only a few odd specimens. Diagnosis is therefore, I think, rather more to be a matter for the opinion and judgment of the individual practitioner than a hard and fast rule. This is especially so as clients vary to a great extent and, whereas some might appreciate the intricacies of the situation, others require to be given a simple common or garden name for their pet's affliction. Possibly some of the cases I will describe later, will more adequately convey to you the views I have endeavoured to outline here.

Prognosis. Whenever the presence of the demodex is established, associated with definite lesions, on the skin of a dog, prognosis must be guarded but, I think, not unduly pessimistic. Nothing can be more damaging to one's prestige than to give a hopeless prospect and advise destruction, only to find that

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in about three weeks the dog has been apparently cured by the "quack" in the next street. I am quite satisfied that, in some instances, a cure of a fairly generalised case may be effected in three weeks, though another, apparently similar, may take as many months. However bad the case may appear, if the owner has any desire for the dog's salvation, it is always wise to attempt treatment, at the same time advising him of the possibility of failure. Do not avoid treatment merely on the grounds of expense, as, in these cases, it can be easily modified and adjusted to suit both the patient and the financial condition of the client. Not infrequently, the case cut down in price appears to react the most satisfactorily, and if the cost is being considered, obtain a suggestion from the owner as to how much he is prepared to spend and inform him when he has reached his limit. The progress will often encourage him to proceed. This commercial factor is our profession's greatest misfortune, in more ways than one.

TREATMENT. This falls under two heads, local or external, and general or internal. I am convinced that here we have a condition where the internal treatment is of the greatest value and should in no case be omitted. In general treatment the two most useful medicaments I have found in my experience are iron and arsenic. Pil ferri et arsenici B.P.C., containing 3 grs. ferrous sulphate and 1/60 gr. arsenic alb., being very useful, administered twice a day to the terrier-size dog, gradually increasing to three or four a day and again reducing gradually when it is desired or necessary to discontinue. Sodium cocodylate and aricyl, which are much less toxic and more readily disseminated through the body than other arsenical preparations, have also been tried with advantage, injected subcutaneously or intramuscularly. Where irritation is pronounced, Clemens Solution, which contains potassium arsenate and potassium bromide, gives pleasing results. The solutions liq. arsenicalis and liq. arsenicalis hydrochloricus may also be used. Where the appetite is affected, quinine and iron often improve this. If we accept the theory of blood toxicity assisting the development of the mite, parathyroid gland would appear to be a rational treatment and has been tried, but not to an extent which justifies a definite report on its effects. However, experiment seems worth while.

In the pustular form, Stannoxyl, a French proprietary preparation of tin, has given me excellent results in a dosage of 4 to 8 tablets a day, and I consider it preferable to vaccines which, autogenous or otherwise, have not proved very successful in my hands. Injections of colloidal silver and carbolic acid in various forms have been recommended, but these have not satisfied me and the dangers associated with the use of the latter do not need to be expressed here. Nuclein appears to convey slight benefit, either orally or hypodermically. Anything calculated to improve the general health and be tonic is worthy of a trial and dietetic rules should be laid down with this in view. I always advocate a liberal allowance of meat, especially raw. I believe there is a French theory that for all forms of eczema, raw liver, on account of its richness in vitamines, is the only essential to a complete cure, and I see no reason why its beneficial effects should not accrue here. It has formed part of the diet of most of my successful cases. I also recommend vegetables and fruits to the total exclusion of pastries, sweets, etc.

LOCAL. The first step is thoroughly to wash and cleanse the parts with ethereal soap; clipping or shaving may be resorted to, but is not always absolutely essential, and I usually act according to the extent of the lesions and the thickness or otherwise of the hair. For local treatment, a variety of preparations are available which show good results. While I do not assert that some form of iodine is definitely curative when used alone, I do think it is one of the most useful agents and one that should form part of any treatment directed to the eradication of the parasite. Where expense is no object, my favourite method is to apply tr. iodi mitis to a small area, about two square inches, and whilst moist, to spray with ethyl chloride until a light hoar frost forms on the surface. This can be carried out over a total of one quarter the area of the body at a time and where this does not include all the affected parts, a similar area may be done the following day. The day after this process is carried out, the parts so treated are smeared with an ointment consisting of liq. formaldehydum 1 part, starch 25 parts, zinc oxide 25 parts, liq. paraffinum 10 parts and vaseline 40 parts. The patient is then left with this on for three days, washed again with ethereal soap and the process repeated. Another method, which is cheaper and practically as satisfactory, is to apply to the affected areas pads soaked in carbon disulphide, another freezing agent. This appears to give a great deal of pain to some dogs, others it does not appear to affect, and experience will show how long to apply it in any particular case. The maximum time it should be held on any one spot is a minute, but some dogs will not tolerate more than to be wiped over two or three times with the soaked wad. A fairly obvious hyperæmia, which quickly subsides, follows its use. After the disulphide has dried off, paint with tr. iodi mitis and apply the ointment the following day, repeating the whole treatment four days later as before. Ung. iodi, rubbed in every other day, combined with the application of ethyl chloride or disulphide every fourth day, has much to recommend it and acts well in some cases. Occasionally, a certain amount of discomfort and distress is exhibited which puts the dog off its food and makes it miserable and dejected, and in these cases I have found an ointment consisting of cocaine, zinc oxide, acid carbol. and lanoline, rubbed in daily in place of the other ointments, gives fairly good results, with an obvious improvement in the dog's comfort. The iodine or formaldehyde ointments can be returned to later. I have tried various other methods of dressing and amongst the more successful have been Hunting's dressing of creosote (1), liq. potassæ (2), and ol. olivæ (14), a 2½ per cent. sol. zinci chlor., a

solution containing chinosol, 20 grains, spts. rect., ½ oz., and glycerine to 2 oz. These are either painted or smeared over the skin every third day, but none of them has approached the success obtained with the freezing agents, iodine and an ointment first referred to. Where there exists the complication of sarcoptic mange, I always prefer to clear the sarcoptic first. Though the ordinary dressings used for sarcoptic generally fail to eradicate the demodex, I consider that, where the demodex in an uncomplicated case is affecting the entire body, two or three preliminary dressings with the ordinary sulphur and oil serve to soothe the patient and diminish the severity of lesions, thus affording an opportunity to carry out any other treatment without undue haste. It may also be used to dress portions of the body not being otherwise dressed and so keep them in check while their turn for more drastic methods arrives.

I am now going to describe a few of the more uncommon cases with which I have dealt and their treatment. They are not selected on account of their success or to " boost " the efficiency of any one treatment, but as a fuller explanation of some of the points I have mentioned.

Case 1. A Scottish terrier dog, 9 months old. Had scratched greatly ever since coming into possession of its owner four months previously, and had been treated with various dressings. When he was brought to me his body was entirely covered with heavy scabs and pustules and an area the size of half a crown on the top of his head and another about twice the size on his back were spongy, perforated and underrun with matter. Microscopical examination revealed both the demodex and sarcopt. He was clipped all over, washed and dressed all over with sulphur, oil of tar and oil of vaseline every four days for three weeks, tr. iodi mitis being applied each time to the suppurating area on his head and back, quinine and iron being given internally. At the end of this period, the irritation and septic sores had disappeared, but a thick scurf remained. This was dressed for about a month with chinosol, rectified spirit and bay rum, when, though the skin was improving generally, the septic area on the head restarted. A vaccine course was then started and the iodine and oily dressing carried on for a fortnight, and at the end of a month he appeared cured. A further month found the scales forming again; the vaccine was discontinued and replaced by hypodermic injections of collargol, and dressing took the form of rubbing in a mixture of sulphur, bay rum and rectified spirit every other day. After seven months he had a perfectly clear skin and heavy glossy coat and we felt a cure had been obtained. Five weeks later, scales again commenced to form and scrapings again held the demodex and after some consideration the dog was destroyed. I feel it was unfortunate that at that time I had not tried the freezing agents. In this case, scrapings were collected approximately fortnightly, the first revealing both sarcopts and demodectes, the last one demodectes, and the remaining twelve negative to both, even slides made from the pus.

Case 2. A Pekingese, 18 months old. An area about 3 square inches on its back and side was bald, red, and covered with flaky material, and I was told it was of about two months' standing and had been treated with Shirley's. Having found the demodex, the part was painted every third day with a 2½ per cent. sol. zinci chlor. for three weeks, followed by ung. iodi for two weeks, when, not the slightest change having taken place for better or worse, he was destroyed. Scrapings taken weekly were, first and second positive, last three negative.

Case 3. A Cairn terrier dog, 8 months old. He was brought to me with an area about the size of half-a-crown on his cheek, which was scaly and presented a few pustules. I pricked one of these latter and smeared the result on a slide and immediately found the demodex. A scraping of the scurf also revealed quantities. As he was a new purchase, he was returned to the vendor, who denied it was follicular mange, and said it was only a scratch, undertaking to return him cured. He returned in a few weeks with only a slight scurviness on the patch and on his chest, which could only be detected by a close scrutiny, but which still showed the presence of the demodex microscopically. The places were not subsequently treated in any way and remained just discernible to the day of his death from a ruptured artery, twelve months later. Scrapings taken every three months, including two hours after death, demonstrated the presence of the demodex on each occasion.

Case 4. A Sealyham, 5 months old. Had a skin suggestive of sarcoptic mange, but scrapings proved negative. A suppurative trouble inside one ear was treated at the same time as the skin and both recovered ordinarily. Three months later the ear was suppurating again and the pus was found to be full of demodectes. There was no sign of trouble on the skin; the ear was dressed three times and appeared cured. No further trouble has been experienced, but only two months have since elapsed.

Case. 5 A mongrel terrier dog, 15 months' old, which had a perfectly oblong area on the centre of his back, about 4in. by 2in., perforated, spongy and suppurating, and the demodex was found to be present in quantities. Nuclein was given orally, the part sprayed with ethyl chloride twice a week and ung. iodi rubbed in every other day. A cure resulted in three weeks. The trouble recurred in the same place 12 months later, was treated, and responded exactly as before. Eighteen months have elapsed since, without further outbreak.

Case 6. An Irish terrier bitch, 9 months' old. Had lost most of her hair and was practically covered from head to foot with flaky scurf and pustules. Liq. arsenicalis Fowler, alternated with Stannoxyl, were given internally; the worst areas were treated with tr. iodi mitis and ethyl chloride and the formaldehyde ointment applied every third day, gradually treating the whole body as parts recovered. After four weeks of this, the few remaining bald and hyperæmic places were dressed every other day with ung.

iodi for about a fortnight, when the cure appeared complete. No relapse had occurred 12 months later, after which I lost touch with the animal. The last ten cases I have treated on these lines during the past six months have resulted in 80 per cent. cures to the time of writing, and I have no doubt that, if any of these recur later, a further course will have the desired effect.

CASE 7. A mongrel dog, 2½ years' old. The owner stated the dog had a perfectly healthy skin from being a puppy until a week before bringing him to me, when he had been bitten by another dog on his back. The wounds were healed, but the skin round each had become inflamed and pustular. Squeezing a pustule produced a slide full of the demodex. This case is only a fortnight old, but good progress is being made with the treatment as for the last case.

It will be observed, from what I have said, that the effect of the parasite varies greatly in individual dogs, but that in all cases the combined treatment of freezing agents, iodine, antiseptic ointments and internal tonics shows encouraging results. However, I feel that these are only early stages in dealing with it and that much experimental work remains to be done, both clinically and in the laboratory. We find the parasite associated with nearly all mammals, from the human being downwards, and yet, practically speaking, only in the dog, chiefly under two years of age, do we find pathological conditions with any degree of frequency. Why should the dog be the chief sufferer? Is there a real difference in the activity of the canine species of the mite or does the dog, particularly when young, offer especially favourable conditions for it? I think we must accept the latter theory, in view of the fact that some dogs are apparently immune to its influences. In this case, is it the skin itself which is responsible in structure or composition; does the blood fail to give it its required resistance, or is a dermatitis or other affection a necessary preliminary to its development? I think these points deserve serious investigation, for in one we may find the ultimate removal of our difficulties and until they are known treatment at its best must remain empirical. I hope to carry out some blood tests in the near future, together, if possible, with the effects of salvarsan and its associated formulæ. There are numerous remedies, both internal and external, which will suggest themselves to the enquiring clinician and I would advise giving anything a trial which offers possibilities, either for the eradication of the parasite or the benefit of the lesions presented. I do think, though, that the laboratory experimenter can still do much for the general practitioner to enable him to base his treatments on rational lines. In conclusion, let me apologise for the sketchiness of these notes, which have been put together in little bits at very short notice, and also, in view of the comparative shortness of my practical experience, if I appear in what is essentially a clinical paper to speak dogmatically, I crave your indulgence.

DISCUSSION.

The PRESIDENT said that, before calling on Mr. Noel-Pillers to open the discussion, he would like to congratulate Mr. Hewetson on the way he had tackled the subject. He thought the paper one of the most practical which had been read at those meetings for some time, and he was impressed by the originality of the treatment adopted.

Mr. A. W. NOEL-PILLERS in opening the discussion, said he would first like to congratulate Mr. Hewetson on his efforts to grapple with this difficult subject. It was an important one, and nearly every general practitioner met with it. It was a condition where the clinician could and must help himself, so far as research was concerned, and thereby help others at the same time. One of the bars to progress had been the diagnosis of "skin diseases" carried out from some distance, without the aid of lens, and microscope. It would seem that the first need was not to bother about giving the condition a label, but to see what lesions were present, and treat the cases accordingly. A clipped area, palpated, inspected, put under the lens, and the microscope used, was a part of diagnosis. He would not say much about the paper itself because he agreed with nearly everything Mr. Hewetson had said, and he had seen some of the cases reported.

Mr. Pillers pointed out there were twenty-three species of *Demodex* and certain of these were found on the dog, horse, ox, sheep, goat, pig and field mouse. He had seen so-called follicular mange in the goat, dog and pig, and it had also been recorded in the other animals mentioned. With regard to the demodex, it could be found in many skins, not only diseased, but in the apparently normal, and in man's beard. This fact in itself raised an extremely important point. It meant that the presence of the demodex did not convey anything very definite so far as the clinician was concerned. *Demodex folliculorum* could be found in (1) *dermatitis simplex*, a condition of the skin with irritation, increased heat and colour, and slight swelling; (2) *pruritus simplex*; (3) *necrosis of the scalp*; (4) *seborrhœa sicca* (dandruff); (5) *seborrhœa oleosa*; (6) *acanthosis nigrans*; (7) *dermatitis exfoliata*; (8) ulceration of the auditory canal; (9) sarcoptic scabies, and (10) avitaminoses (? eczema). Pyodermatitis of continental writers was our typical pustular follicular mange. Demodex could be found in the fæces of affected dogs. With regard to some of the diseases mentioned, diet and habits seemed to have important bearings on their causation. Many animals recovered after having been given a purgative and raw liver, *i.e.*, intestinal stasis corrected and vitamins added to the diet. Another point was what the owner should be told when he had a dog suffering from a skin lesion *plus* the presence of demodex. He thought the best thing that a practitioner could do would be to tell him the parasite was present, but the animal should be treated for the main lesion. Pyodermatitis seemed to be the worst condition, as it was difficult to treat, either by iodine, local anæsthesia or

vaccines. Carbon bisulphide on certain dogs caused great pain. Mr. Pillers said he had had an extensive correspondence on the subject of treatment and it was surprising how successful some practitioners were and how unlucky others appeared to be, but most would agree with Mr. Hewetson that it was better to adopt a definite line of treatment before advising more drastic measures. Mr. Pillers said he was sure if Mr. Hewetson would go on in the way he had been, he would be able to associate a definite treatment with a definite lesion and in this way advance the cause considerably.

Major J. W. WRIGHT wished to express his thanks to Mr. Hewetson for the trouble he had taken in presenting the paper. He had placed a good many lines of treatment before his audience that afternoon. Most cases, when received by practitioners, were in an irritable condition owing to the application of ointments, etc., by owners. He agreed with Mr. Pillers that demodex could be found in practically all conditions of the skin, and he had come to the conclusion that the less one did to the skin, the better. He thought internal treatment and diet the best course to adopt, and at the present time he was so treating a patient, with satisfactory results.

Mr. G. MAYALL said he thought that a dog suffering from that condition should be first clipped. He treated with balsam of Peru in the proportion of one of Peru to three of spirit. This treatment had also been given to cats. Another treatment was caraway oil 1 pt., spirit 1 pt., and castor oil 15 pts. He would like to know if Mr. Hewetson had examined a dog with regard to the vitality of the parasite after using a freezing agent, and to what conclusion he had come.

Mr. F. G. EDWARDS said he had seen many cases of follicular mange and had given the following treatment, which was published by Chalmers recently in *The Veterinary Journal*—2 grs. mercurophen, 4 ozs. spirit, and 4 ozs. water, applied three times daily. He had been very disappointed with the results and would now try the treatments quoted by Mr. Hewetson.

Mr. HEWETSON, in reply, said he was grateful for the way the paper had been received, and he had to thank Mr. Noel-Pillers for his assistance in that subject. He noted the President's remarks. With regard to research on the disease and clinicians helping themselves, he (Mr. Hewetson) thought that the laboratory could help a great deal. He noted what had been said with regard to finding the demodex in healthy skin and thought the satisfactory results depended upon the thoroughness with which treatment was carried out. With regard to the mercurial preparations, he had not tried them, but hoped to do so.

He agreed with Major Wright that internal treatment was important and, with reference to Mr. Mayall's remarks with regard to clipping, he said that some owners objected to their dogs being clipped, and he had treated animals with success without clipping. In reply to the query raised by Mr. Mayall, he had not examined a dog immediately after applying a freezing agent.

Contagious Vaginitis in Cattle.*

By THOMAS WILSON, M.R.C.V.S., Nantwich.

Most of my remarks are based on a case of infective vaginitis which commenced in a herd of dairy cattle on one farm in my district several years ago. I intended describing this case at our last meeting, but owing to other business we had not time to discuss it.

The herd in which this disease appeared consisted of about 55 dairy cows and two bulls. Heifers bred on the farm were kept to replenish the stock, and also a few cows were purchased each year to maintain full strength. Fresh bulls were purchased at the commencement of each breeding season.

Previous to 1922, the owner informed me he had no cases, of any account, of vaginitis amongst his cattle. In 1922, about 50 per cent. were affected with a contagious vaginitis. In 1923 and 1924, the whole of the cows and heifers was affected. In February, 1925, the owner, owing to ill-health—but considerably influenced by the desire to get rid of this disease from his cattle—sold out the whole of his dairy stock by public auction. After an interval of six weeks, during which time he disinfected the shippons and premises as far as practicable, he commenced to purchase fresh stock, including two bulls, and all apparently clean and healthy. All the cows, as they came into season, were put to the bull and everyone, without exception, showed symptoms, mostly severe, of vaginitis in from one to three or four days after service.

SYMPTOMS. The symptoms observed were those usually described for coital exanthema or contagious granular vaginitis, and it is here that I should like to raise a point for discussion. Are these two separate and distinct diseases or are they one and the same? Personally, judging from this case and others with which I have frequently dealt, I am of opinion that they are the same; at least, I have not been able to distinguish, by a clinical examination, one from the other. In this case and others, some animals showed the typical lesions which denote coital exanthema, whilst others of the affected herd exhibited lesions from which one would diagnose the case as one of contagious granular vaginitis. Both may be described as contagious diseases of cattle spread during coitus and characterised by peculiar nodular formations in the swollen vaginal mucous membrane. In granular vaginitis the lesion is said not to be so exaggerated as in vesicular vaginitis, in which there is a temperature of 1-3°; small vesicles (split pea size) form on the vaginal mucous membrane within 3-4 days. Only a small number of hard nodules develops within 3-4 days, which change into vesicles and later into ulcerations; also, in this disease, *i.e.*, vesicular vaginitis, complete recovery follows usually in two weeks, more rarely in from 3-4 weeks.

In the case I am recording, symptoms in the cows were the congested, swollen vulval mucous membrane of vaginitis, also red spots or streaks of red on the

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mucous membrane. In from 1 to 3 days, smooth nodules appear on the mucous membrane of the vagina and there is a mucoid, odourless discharge from the vagina. There are frequent and painful micturition, shifting of the feet, swinging the tail, etc.

The granular nodules in some cows increase in size; vesicles form and ultimately burst, setting up a muco-purulent discharge (vesicular vaginitis). The constitutional disturbances in some cattle are very slight, in others considerable. Temperature is elevated 1-3°; there are loss of appetite and condition, and considerable diminution in milk for several days.

COURSE. In the majority of cases there is a vaginal discharge for two or three months and which, in some, continues right up to the time of calving—a thick, white, copious muco-purulent discharge.

TREATMENT. This is not satisfactory. Mild cases require no treatment. Syringing with mild astringent antiseptics, such as sulp. zn. pb. acet. is very useful. In France, considerable success is claimed from the following:—The vagina is first washed out with a 2 per cent. solution of permang. of potassium. An ointment of zinc. sulp. 4 gm., iodine I gram., and lanoline 100 grams is then introduced into the vagina as far as the meatus uretharious with the aid of the finger. Repeat after two days and in severe cases a third and fourth time.

The majority conceive after first service, even though badly affected with vaginitis. Of those that did not hold to the bull at first service, most held at the second. Except five, all held after third or fourth service.

STERILITY. I do not consider that this vaginitis is a cause of sterility—at least, of not more than a temporary one, in which case the vaginitis had spread to the cervix of the uterus. The majority of cows in this herd held to the bull after first or second service, and in other outbreaks of contagious vaginitis, in which every beast in a batch of heifers may be affected, they have held after first service and proved safe in calf. I do not consider the condition has any unfavourable influence on conception, except that temporary sterility may have in a few cases.

ABORTION. This stock was troubled with contagious abortion before it became affected with vaginitis. During the last three years, whilst it has been so badly affected, no cases of abortion have occurred and, judging from experience of this and other cases. I am of opinion that vaginitis is not in any respect a cause of abortion.

IMMUNITY. One attack does not in any way give immunity; in fact, in those cases in which the cattle were put to the bull a second time, the second attack of disease was much more severe than the first. A number which have apparently recovered from the disease appear to be carriers (*e.g.*, cows sold—infecting other stock).

At one time, contagious vaginitis was believed to be connected with abortion and sterility in infected herds and I believe that it is still believed by many to be a cause of sterility.

RELATION OF VAGINITIS TO CONTAGIOUS ABORTION (H. AND M.). Regarding the influence of vaginal catarrh on pregnancy, the views of practitioners vary widely. Many observers report on relatively frequent cases of abortion in affected cows and still more frequently on the observations in which œstrum appears repeatedly in the animals, and conception only after repeated copulations or not at all. On the other hand, there are also numerous observations according to which the disease has no unfavourable influence either on conception, or in the full development of the fœtus. These contradictory results of observations are probably due to the variations in the character of the disease. (Conceptions may be prevented by a non-specific uterine catarrh and abortions not due to the vaginitis but to infectious abortion.)

REFERENCES. Hutyra and Marek, *Pathology and Therapeutics*; Wooldridge's *Veterinary Medicine*.

DISCUSSION.

The PRESIDENT (Mr. J. Holroyd), said that Mr. Wilson had presented a very interesting description of contagious vaginitis, which was a subject which was of great interest to the cattle practitioner. To the town practitioner, however, the interest perhaps was not so great. He was surprised that reference had not been made to the bull as being the cause of the disease. In his opinion, granular vaginitis and vesicular vaginitis were two separate conditions, and the latter was certainly carried by the bull. With regard to the French using lanoline treatment, he had always found ointment very unsatisfactory, and used silver preparations. He did not like perm. of potash for treatment. With regard to sterility, he was of opinion that it had nothing to do with contagious vaginitis. Cases of granular vaginitis usually lasted a very long time and proved a source of annoyance. He hoped the members present would give their views on this subject.

Mr. E. H. CURBISHLEY wished to thank Mr. Wilson for bringing forward that subject; indeed, he said, one perhaps should commiserate with him for attacking such a subject as that, in regard to which literature was very limited. He thought that there were three separate conditions—granular vaginitis, vesicular vaginitis, and vesicular exanthema. He observed that Mr. Wilson had not said anything about the cause of the disease. With regard to treatment, that must, of course, be regulated by the application of a particular drug on a particular organism. He pointed out that the medical profession was far ahead of the veterinary profession so far as that was concerned—they knew how certain organisms behaved under the action of certain drugs. He thought that in that direction there was much room for research, and research workers should deal more with common diseases. Collaboration between laboratory workers should be encouraged, and a veterinary surgeon should be in a position to send specimens to a laboratory, when he would then be able to get more exact knowledge of a disease or condition he was treating.

Mr. G. MAYALL remarked that it was time a paper like that was brought forward, and he agreed with Mr. Curbishley that the "medicals" were far ahead

on that subject. The economic side of the question was just as great with the veterinary profession as with the medical profession. He thought there was a difference between vesicular exanthema and contagious granular vaginitis. The first-named could be cured quickly, but the latter had a longer course. He agreed with the President that treatment by silver preparations was good, but no mention had been made of the use of pessaries. He (Mr. Mayall) had used them with success. The cases which he found caused a lot of trouble were those of necrotic vaginitis, where the after-birth had been left in the vagina. He did not care for the French treatment mentioned by Mr. Wilson.

Mr. F. G. EDWARDS stated that he had used pessaries made by Bayer, which had acted very well. He thought that there was no difference between vesicular and granular vaginitis, and that the bull had been some cause of the trouble in Mr. Wilson's case.

Mr. WILSON, in reply, said there seemed to be one opinion existing, and that was that vesicular and granular vaginitis were two separate diseases, but he had not been informed how to diagnose one from the other. Some cows, it seemed, showed symptoms of granular vaginitis and some of vesicular vaginitis, but he was not able to make the distinction. With regard to treatment, he agreed that silver preparations were good, but treatment did not seem to be necessary—the disease seemed to cure itself. There did not appear to be any serum or vaccine to treat the condition. Concerning sterility, Mr. Wilson cited the case of a cow which was suffering from vesicular vaginitis and which held to the bull at first service, and went full time. Most of the cows held to full time after the second or third service. He agreed with Mr. Curbishley that there was room for research on that subject. With reference to the bull as cause, the bulls used in the case reported were clean and some were purchased which were known to have served healthy cattle, and cattle that were healthy after service. He had not had any experience with pessaries, mentioned by Mr. Mayall and Mr. Edwards. Mr. Wilson concluded by expressing his thanks for the way the paper had been received and for the discussion.

WORLD'S POULTRY CONGRESS.

In connection with the third World's Poultry Congress, to be held at Ottawa, July 27th to August 4th, 1927, the Belgian Minister of Agriculture has nominated official representatives, and a notification of acceptance has been received from the Commissioner of Agriculture, Moscow. The Ministers of Agriculture for the six states of the Australian Commonwealth are meeting this month to discuss participation in the Congress, and it is understood that Burma will be represented and will send an exhibit of jungle fowl, from which the domestic fowl originated. New exhibition buildings are being erected at Ottawa in readiness for the Congress.

Government Veterinary Conference at Penang.

RINDERPEST IN MALAYA AND SIAM.

A Conference of Government, State and Municipal Veterinary Surgeons, was held on the 13th and 14th November, 1925, to discuss the subject of animal disease generally, with special reference to rinderpest. The following were present: Messrs. P. G. Short, M.R.C.V.S. (G.V.S. Perak South) Chairman; H. G. Simpson, F.R.C.V.S. (G.V.S. Penang); S. L. Symonds, B.V.Sc. (G.V.S. Selangor); J. J. Fleury, M.R.C.V.S. (S.V.S. Kedah); T. W. Wright, M.R.C.V.S. (M.V.S. Penang); R. Macgregor, M.R.C.V.S. (G.V.S. Pahang); H. H. Tungku Abu Bakar, M.R.C.V.S. (S.V.S. Johore), and H. Hay-Barclay, M.R.C.V.S. (G.V.S. Singapore).

There were also present: Messrs. R. V. Patel, G.B.V.C. (A.V.S. Penang); M. V. Pillay, G.B.V.C. (A.M.V.S. Penang); A. R. Kuppuswamy, G.B.V.C. (V.I. Prov. Wellesley North); A. Joseph, G.B.V.C. (V.I. Prov. Wellesley South.)

Mr. R. P. Jones, M.R.C.V.S., Veterinary Adviser to the Royal Siamese Government, Bangkok, attended by special invitation.

Apologies for non-attendance were received from Messrs. G. Moir, O.B.E., F.R.C.V.S. (G.V.S. Perak North); R. A. B. Stanhope, M.R.C.V.S. (G.V.S. Seremban), and P. S. Falshaw, M.R.C.V.S. (G.V.S. Singapore, retired), the latter regretting that illness prevented attendance, but wishing success to the meeting.

It was unanimously agreed that expressions of regret and wishes for a speedy recovery be conveyed to Mr. Falshaw.

A paper on "The Prevention and Control of Rinderpest in Malaya," which had been previously circulated, was taken as read and discussion on it was invited.

The paper was as follows:—

THE PREVENTION AND CONTROL OF RINDERPEST IN MALAYA.

By H. G. SIMPSON, F.R.C.V.S., G.V.S. Penang.

It is usual to start a paper on disease with a history dating from somewhere "B.C." of the subject under discussion. The majority of us are sufficiently conversant with these details and I will confine my remarks to the present day aspect in Malaya.

Of the various diseased conditions we are called on to combat, the one which I think most vitally affects us is rinderpest, inasmuch as, in my opinion, it is not endemic and is, therefore, a scourge to which we should at all costs endeavour to preclude entry or, when it has entered, speedily to exterminate. Periodically, the Peninsula has been the unfortunate victim of outbreaks, the origin of which has been extraneous and the results of the ravages of which have been, in some cases, appalling. The fact that the ravages have been appalling does not reflect discreditably on the veterinary departments concerned, inasmuch as, so far as the Northern States were concerned, it was impossible to obtain information of the existence of disease before its ravages were comparatively widespread. Under these conditions and in the absence of a dependable

serum, the effective means of control of a disease of the nature of rinderpest are early detection and drastic action. In the absence of early detection, drastic action is not of much avail and other courses are indicated.

A study of the incidence of rinderpest in Malaya will show that its origin is import by land or sea. With our widespread land frontier line to the north, it is extremely difficult, and almost impossible in certain places, to control the whole of the import of cattle—the country is jungle country beset by various paths and routes which cannot possibly be controlled by the officers of the veterinary departments concerned. It therefore follows that, in spite of the erection of quarantine stations at certain points of entry, animals will be surreptitiously brought into the Peninsula, often with no more harm than evasion of quarantine and import fee; in other cases, with the introduction of rinderpest. Unfortunately, our northern neighbour, Siam, and the Unfederated States (except Kedah) have no veterinary departments to assist in the control of this traffic and the existence of disease in these places is too often looked upon as an act of God which is inevitable, and which should not impede the transit of animals.

The places at which rinderpest is most likely to enter are the land frontiers of Kedah and Pahang, which are extremely wide, and a small portion of North Perak and the sea imports at Penang, Port Swettenham and Singapore. As most of the disease comes from the West Coast of Siam by sea traffic, Singapore, which imports mostly from the East Coast, is not so vitally affected. The check on this land traffic consists of two quarantine stations on the Kedah border of Siam (roughly 130 miles in extent) two stations on the Perak border of Siam (roughly 80 miles in extent) and one station on the Pahang border of the Northern States (roughly 190 miles in extent). It is not difficult to recognise from this that, whilst the few scrupulous owners bring their animals through these stations, the traffic in surreptitious movement must be large and it is here the danger lies. So far as the Colonial and the Federated Malay States ports are concerned, I think it is fairly correct to assume from experience that Siam is mainly responsible for the import of rinderpest at these places; this also applies to the State of Kedah, whose import is overland and entirely Siamese.

Having narrowed the danger zone down to certain areas, one might assume that it would be comparatively easy to prevent the introduction of this disease. The obvious course would be to refuse to receive from a country known to be infected and also without adequate veterinary supervision. Unfortunately, we have to consider the meat supply and the fact that Siam is the main source of that supply. Under these circumstances, discretion has to be exercised as to how far the meat supply may be least interfered with without endangering the whole of the susceptible stock of Malaya, by regulating the import from certain places which it is considered are the least dangerous. This discretion is exercised by each of us independently in our own departments, and, I take it, is arrived at as a result of the experience of the various veterinary officers from their importation of disease from certain places. A reference to the quarantine restrictions published in the Government Gazettes of the Colony and the F.M.S. will show that this experience has apparently varied considerably in the various States and Settlements. The "prevention," then, of rinderpest depends primarily, I think, on its attempted exclusion by means of the Quarantine Regulations imposed on imports from infected countries. A study of the various regulations imposed and results achieved thereby is interesting. Perak, as a result of total prohibition from all ports on the West Coast of Siam, has been free from rinderpest since the prohibition was enforced twelve years ago; previous to this for several years her history had been a succession of outbreaks from imported animals. Penang, with restricted imports from certain specified ports on the West Coast of Siam, in the last four years has had seven outbreaks in the quarantine station, one of which, unfortunately, communicated itself to outside areas. Port Swettenham, with occasional prohibition against certain West Coast Siamese ports, has had nine outbreaks in the quarantine station in six years.

The lesson from the above is obvious—remove the cause and the effect will cease—but, unfortunately, Penang and Port Swettenham—as the principal source of the meat supply to Perak—cannot entirely remove the cause, or Perak and they themselves would perish. So much for sea imports. The land imports from Siam into Kedah and *via* Kemanan by way of Pahang into the F.M.S. are even more dangerous, inasmuch as all of the outbreaks in Kedah or Pahang were the result of animals imported without passing through a quarantine station—*i.e.*, surreptitious movement. The establishment of quarantine stations, does not, of course, do away with the possibility of the introduction of disease, but affords a valuable means of localising it should it manifest itself in a station, therefore the discussion of such quarantine should come under the head of "control." Animals are quarantined at the point or port of entry for ten days. Assuming that rinderpest manifests itself in a quarantine station and can be confined to that station, its eradication is comparatively simple—it is, however, when it escapes to the outside that the real trouble starts. Provided the station is sufficiently commodious and overlapping of consignments can be avoided, it is usually possible to confine it, but it has happened in the past that apparently healthy animals discharged have carried infection to the outside, such animals having been discharged after ten days' quarantine and a few days before the manifestation of disease in an overlapping consignment in the station. Overlapping of consignments in a land station can, of course, be obviated by detaining incoming animals on their side of the frontier till the station is ready for their reception, but, in the case of sea borne animals, they have to be disembarked to allow the vessel to proceed and they may have to be admitted to a station that possibly does not admit of their isolation on arrival. This is a question that will probably raise discussion on the suitable type of quarantine station to be erected and I think such discussion will be useful, as there are many types at present in existence. An outbreak of rinderpest in a station should, if possible, afford an opportunity of testing the efficacy of serum, but up to now it has been found that slaughtering is the quickest method of having the station ready for further reception.

A quarantine station is for the purpose of receiving apparently healthy animals—the question arises, how is a consignment to be dealt with that arrives with rinderpest in

evidence ? If a land frontier station is involved, procedure is not difficult, but the position at a port station is complicated—it would obviously be unwise to allow landing and transference to a station containing apparently healthy animals ; on the other hand, to refuse landing means that they may smuggle them ashore by night at a lonely spot, the first intimation of which is disease at or near this spot—this has been my unfortunate experience. At present I refuse landing and notify all ports—I have to take my chance of having it thrown back on me. I am dead against the landing of diseased animals except at a place where there is no danger of infection to other animals and where carcases can be suitably dealt with. As far as I know at present, no port has these facilities and in their absence at Penang I refuse landing and take my chance. This is another important point in the consideration of effective quarantine. The question that affects us vitally in the control of rinderpest outside a quarantine station is procedure. In a town where animals can be confined to sheds and ingress and egress to a great extent controlled, the position is often difficult, but when it comes to the question of animals, and especially buffaloes, scattered over a wide area of kampongs with indiscriminate mingling of both human and animal, the action taken will have to be drastic to be effective and not even drastic action will be effective unless early detection takes place. Here, again, as in quarantine restriction, I think we shall find a divergence in the procedure adopted to combat its spread. The methods employed can be discussed under two heads, *viz.*, " A "—compulsory destruction with or without compensation, and " B "—the use of protective inoculation. " A "—The slaughter of diseased animals without compensation is legal under the Quarantine and Prevention of Disease Ordinance of the Straits Settlements—there is no question of compensation in this case—but contacts may be isolated and, in the event of disease appearing amongst them, compensation is allowable if such animals are slaughtered. No provision is made for compensation for diseased animals. For the last twenty years the procedure adopted by the Settlement of Penang in controlling rinderpest amongst buffaloes when it occurs in a quarantine station has been immediate destruction of diseased animals without compensation and the slaughter for local consumption of all contacts showing no signs of disease. When this is completed, the station is disinfected and ready for use again. When the infection has spread to surrounding kampongs, which up to now have been capable of localisation, the procedure is the immediate destruction without compensation, a strict quarantine on known and suspected contacts and their destruction without compensation as and when they become affected.

The destruction of diseased animals is, we all know, one method indicated for the prevention of the spread of disease under certain conditions, *i.e.*, when we have reason to believe we are dealing with a localised outbreak; the question that arises is, is that destruction best carried out with or without compensation ? I believe I am correct in saying that the F.M.S. and Kedah grant compensation to the owners of diseased animals compulsorily slaughtered. I am not an authority on rinderpest, but my experience has led me to believe that compulsory slaughter in the discretion of the veterinary officer certainly controls the spread of rinderpest and is indicated where the disease is fairly well localised, but that such slaughter without compensation may be attended with the risk of concealment of disease by native owners.

When the disease is confined to the quarantine station there may be a difference of opinion as regards compensation for diseased animals. An owner imports to a quarantine station from a place from which he knows he is liable to get disease, but he gambles on his animals being free. When his animals exhibit the disease in the station is it advisable to compensate him when he himself has imported the disease ? On the other hand, his diseased animals may transmit the disease to other men's animals in the station who have probably almost finished their quarantine period—this is certainly a hardship which is difficult to guard against in a station, but which may often occur and I think compensation may be indicated in such a case.

" B "—Those of us who have had practical experience of the use of serum in this country among buffaloes are, I think, unanimously of opinion that the results achieved have been disappointing. I will go further and say that, in my opinion, some disappointment extends to its use in the local breed of cattle only. The Indian is in another category, possessing, as it does, a high degree of resistance to rinderpest with or without serum protection. In the absence of a reliable strain of serum, the control of an extended outbreak amongst the buffaloes of Malaya seems an almost hopeless task. In view of the extreme importance of the buffalo to Malaya's agriculture and meat supply I consider that it behoves us, as veterinary officers, seriously to consider whether some definite reason cannot be urged for the attempted production of a serum which will afford us the means of fighting rinderpest on more scientific lines than at present and which owners have a right to expect from a department which should be scientifically equipped to deal with this disease. Year after year we indent on India for supplies of serum which have proved ineffective—year after year we destroy that serum after twelve months as, according to instructions, it has deteriorated, and at intervals we get an extended outbreak of rinderpest which decimates the buffalo herds in Malaya. This has been the position for thirty years and no attempt has been made in that time to determine what the strain of the infection is or how best to combat it with a suitable strain of serum. I think one may be excused for asking what is wrong with the Malayan Veterinary Service ? Kedah alone, in 1922-23, had no less than 10,000 known deaths in their outbreak, lasting twelve months. With buffaloes at the price of one hundred dollars each, as they were then, this represents a loss of one million dollars. Pahang's outbreak in 1912 was equally severe, lasting twelve months—in addition, she experienced another outbreak in 1924 which has not long ceased. Penang and Province Wellesley, in 1923-24, as a result of drastic action in a comparatively confined outbreak, stamped it out in four and a half months with a loss of 228 head. In comparing these figures you must remember that Penang and Province Wellesley were more fortunate in their situation than Kedah or Pahang and were in a better position to cope with it both geographically and in the fact that they were able to drop on the disease at the earliest moment, and also that they relied on the slaughter

method. Serum was only used experimentally and the results obtained gave no cause for optimism.

The use of a proved serum as a protective in a country where the disease is endemic is indicated, but we have no *data* to show what the results are likely to be in Malaya. I think that it will possibly prolong the outbreak a little, but if the results warrant it this is a small matter compared to the present situation. With regard to this suggested prolongation, an opportunity was afforded me in the Province Wellesley outbreak of studying the duration in nine centres were serum was used. The results were as follows, *viz.* :—

A.—*Destruction of Diseased Animals.*

Centre A.—(23 buffaloes, 39 bulls) : 3 affected buffaloes destroyed ; remainder did not take the disease—period of duration, 4 days.

Centre B.—(20 buffaloes, 3 bulls) : the second infection of Centre A above occurred 26 *days* after the first outbreak —due, no doubt, to a reinfection : 4 affected buffaloes were shot, no others were affected—the disease lasted 7 days.

Centre C.—(19 buffaloes, 69 cattle) : 5 affected buffaloes ; 2 bulls were shot. As a result, 14 buffaloes and 67 cattle contacts did not contract the disease—period of duration, 11 days.

Centre D.—(60 buffaloes, 36 cattle) : 4 affected buffaloes, 3 cows shot. The contacts, 31 cows, 2 calves (local breed) and 56 buffaloes did not take the disease—period, 10 days.

Centre E.—(17 buffaloes, 2 bulls) : 17 affected buffaloes destroyed, others unaffected—period 21 days.

Centre F.—(39 buffaloes, 35 bulls) : 15 buffaloes ; 1 bull shot, remainder unaffected—period, 20 days.

Centre G.—(73 buffaloes, 5 bullocks) : 13 buffaloes shot, 1 died ; remainder did not take disease. They were isolated at distances varying from a quarter to one mile in small lots. In this outbreak, infection of outstanding lots was traced to infection by human agency—period, 11 days.

Centre H.—(183 buffaloes, 12 cattle) : 19 buffaloes destroyed ; 1 died, remainder did not take disease—period, 1 month, 11 days.

Centre I.—(44 buffaloes, 21 bulls) : 1 buffalo shot, 1 died, remainder did not contract the disease—period, 21 days.

Centre J.—(52 buffaloes, 50 bulls) : 6 buffaloes, 1 bull died ; 7 buffaloes, 2 bulls shot, 1 bull recovered ; remainder unaffected—period, 32 days.

As a contrast with the use of serum, in only one centre, with doses as large as 300 c.c., 100 animals were involved, 78 of which died and the duration was 31 days. This same serum in India was used on 478,000 bovines in 1924, with a loss of only 2,340 or ·56 per cent.

Rinderpest, when it once starts in susceptible animals, spreads with alarming rapidity—often with a series of wide jumps from infected centres, and it is only by most strenuous efforts that even an apparently isolated outbreak can be kept under reasonable control in a Kampong country. It means work from sun up to sun down for the Government Veterinary Surgeon and his staff in endeavouring to "ring round" the outbreak. What this means in Malaya only those who have experienced it know. On the other hand, when the disease has become established and its virulency apparently diminished after an existence of a week to ten days, it becomes insidious. At the onset of the disease, affected animals die rapidly in from thirty-six to forty-eight hours—this period, however, is extended to four and five days, as the period progresses. In recoveries the disease usually runs its course in eight to nine days—a tendency to recovery is noticed usually about the seventh day, followed by a rapid convalescence, but, as these recoveries are rare, I have only had the opportunity of drawing my deductions from six cases. In the F.M.S. there is a very efficient staff of Penghulus, who are of great assistance in controlling movements, and the annual census of buffaloes made by them is a great help in tracing up animals. Unfortunately, the Penghulus system in the Straits Settlements is practically in its infancy, but it has already demonstrated its helpfulness to the veterinary department in outbreaks of disease. As regards the help received from native owners in eradicating rinderpest, we have yet to try to educate the majority of them up to affording us assistance in our work. In Pahang and also in Province Wellesley I found there was great objection to the use of serum amongst the Malay Ryots ; the native of India, on the other hand, welcomed it in many cases (probably from experience of its use in his homeland) ; the Chinese owner, though not so emphatic as the Malay, prefers that his animals be left to die if his own homœopathic remedies (and the animal's resistive powers) do not effect recovery. One of the greatest drawbacks with which we have to contend is the spread of the disease by human agency ; we have seen the difficulty experienced in a civilised country with this same drawback, *viz.*, foot-and-mouth disease in England, and in this country it is almost insurmountable. Native mentality is incapable of grasping its vital importance. I had an opportunity of demonstrating to an owner that he had undoubtedly infected a batch of his healthy animals ten miles away from an infected herd, 75 per cent. of which died as a result, but the lesson was ineffectual and Allah was blamed for it. Strict police supervision is our greatest asset at present—although our outbreak only lasted four and a half months, I attribute its comparatively satisfactory conclusion to a great extent to the fact that 370 convictions were obtained for breach of quarantine regulations, and the constant supervision of the inspectors of this department, whose mileage during that period averaged 1,200 miles per head per month on roads alone.

There appears to be no up-to-date standard work on rinderpest ; current literature is confined to articles in veterinary periodicals as a result of experiment with the disease in countries whose Governments encourage research work. It is regrettable that Malaya has not been able to contribute its quota to those—there have been opportunities, but a lack of facilities. About eighteen months ago, Sir Arnold Theiler, of the South African Veterinary Service, in passing through Malaya gave some of us the benefit of his wide experience of rinderpest. It is unfortunate that his visit was a fleeting one and that an opportunity was not afforded for this Government to profit by it, but I gathered from him what he considered to be important and essential points regarding rinderpest, and they are interesting—*viz.* :—

(1) Vitality of the virus is low and, under the most favourable circumstances, is lost in two days (Indian

experiences place it at three days and in favourable artificial circumstances as long as ten days).

(2) Any part of a carcase is non-infective as soon as decomposition sets in, as demonstrated in South Africa at a time when it was not possible to bury them.

(3) That malignant catarrhal fever is frequently associated with rinderpest, as evidenced by cutaneous and eye lesions.

(4) That many of the deaths in badly-debilitated animals are due to complications of redwater—the immunity of this having broken down under the attack of rinderpest.

(5) That South African experience has demonstrated the efficacy of the serum treatment of the proper strain; and that serum, when properly prepared, retains its efficacy for four years.

(6) In answer to a question as to the failure of serum amongst Malayan buffaloes, he expressed the opinion that probably we were working with the wrong strain. This question, however, could only be conclusively answered by bacteriological work on the subjects in question.

(7) That the reservoir of infection is the diseased animal and that animals in the incubative stage of the disease are most probably infective to other animals.

No 2 is important as disposing of the layman's bogey that putrid carcases, floating in the rivers or sea, are capable of spreading the disease and that the burial place of carcases is infective for a long period. Numbers 5 and 6 show clearly, in my opinion, that the sooner the Malayan Veterinary Department puts its house in order on the serum question the better. No 7 shows the danger we are at present unable to obviate in overlapping consignments in a quarantine station—the answer to this is probably that the thermometer is our standby, but, apart from the difficulty in large consignments, I should be glad to hear the experience of others in its readings in tropical countries. I have had some curious readings in healthy animals, which, were they in an overlapping consignment in a quarantine station, might cause consternation.

The question of differential diagnosis is important; it is perhaps unwise immediately to proclaim rinderpest as soon as we discover symptoms and *post-mortem* appearances indistinguishable from those associated with the disease—but, at the same time, definite diagnosis should be made as quickly as possible and the history will considerably facilitate this. In a port quarantine station, and especially where landing is effected by swimming, the ingestion of salt water gives rise to symptoms during life and, when deaths occur, to *post-mortem* appearances almost indistinguishable from those of "pukka" rinderpest.

Hæmorrhagic septicæmia *post-mortem* examinations sometimes exhibit bowel lesions indistinguishable from those of rinderpest, but the use of the microscope and the presence or absence of the œdematous lesions should enable an immediate diagnosis to be made.

Coccidiosis will, perhaps, present more difficulty—the history, symptoms, and *post-mortem* appearances almost coinciding; but, here again, the microscope should be the deciding factor; personally, I have not met with this condition in Malaya, and I should be interested in the opinions of those who have done so.

The incubative period of rinderpest is an important item—experimentally it has been proved to be as short as five days, with an extended period to ten days. In natural infection I have not observed as short a period as five days. In the outbreaks with which I have dealt the period would appear to be normally ten days and in more than one case I have seen it extended to twelve days. Personally, I do not consider myself safe under twelve days and I impose a quarantine of twelve days on imported buffaloes.

You may probably say that these remarks contain nothing original and do not present a solution of some of the difficulties I have presented to you. Personally, I have nothing original to offer, and I do not propose to offer any solution of the difficulties. I have raised questions of a controversial nature solely with the idea of provoking a discussion which I hope may result in a more standardised working between all of us. We are widely-scattered units, each carrying out his own ideas and doing what he considers best for the Government. Some of us do not meet for years, and some have not met before to-day. I should imagine that we are unique in this respect compared to the veterinary departments of other British Possessions, and that is our great disability. Even with this disability, an interchange of views such as this meeting (the first of its kind) offers us, will, I hope, be productive of results beneficial to all of us. Everybody here has inconvenienced himself to attend and many hundred of miles will be covered before all reach their headquarters again, but I think none of us will regret it.

As one of the instigators of the meeting, I would ask you to accept my thanks for the efforts you have made to attend and to express the hope that, if you have not been disappointed, it may be the precursor of many similar ones.

Mr. G. Moir, the G.V.S. Perak (North), (whose remarks had been communicated by post in his absence), in opening the discussion, stated: It is agreed, I think, that rinderpest is not enzootic in Malaya, and Siam is the country from which the very large majority of our outbreaks originate. Now, the importation of cattle from Siam could be rendered much safer than at present by the establishment of a veterinary department for the whole of Malaya, the head of which should have control directly over the landing of cattle at the different ports. At the present time, owing to the overlapping of consignments that occurs in the various port quarantine stations, the protection afforded by these stations is considerably compromised, as past experience has shown. If the control of these stations was vested in one man, who had authority to decide at which ports animals were to be landed, this overlapping could be done away with and disease, if imported, would be confined to the quarantine station. There would be no hardship in this, as cattle imported from Siam by sea all arrive in tonkangs, and it would put a stop to the system whereby one station is receiving and discharging, say, four or five times a week, whilst another only gets a consignment once a month or so. The upper Perak frontier station only receives after the former batch has been released, so there is no overlapping there.

With regard to outbreaks of rinderpest on land, my experience is that the spread of the disease is practically

always by movement of cattle, and, if this can be prevented, the disease can be kept within reasonable limits. My custom has been at the beginning of each outbreak to make a complete census of the cattle in the infected area. The veterinary police sergeant goes round regularly and checks the numbers, but the G.V.S. himself checks at frequent uncertain intervals. Each owner's animals have to be accounted for at each check. This I have found the only way to stop surreptitious movement of cattle within an infected area and I attach primary importance to it.

It is quite possible that we are working with a different strain of virus in this country from that met with in India or elsewhere, but it must be admitted that Indian plain cattle, when attacked, do not suffer more severely in Malaya than, I understand, they do in India, and the mortality is not greater. That would rather point to the susceptibility of the local cattle as accounting for the difference, rather than that the strain of virus is different.

I am not sure if it is suggested that serum should be produced locally, but, if that is the suggestion, I hope it will not go forward as a recommendation to Government that a serum station should be opened. Even taking into account the 10,000 deaths in Kedah, I think the adjective " appalling " and the word " decimates " are not applicable to outbreaks in Malaya. I once went thoroughly into the cost of a serum station and it was found that the cost of maintenance would have been several times the cost to Malaya of the outbreaks, and that was a time when rinderpest was much more prevalent than it is now.

An accompanying report of Mr. Moir's last outbreak in 1912, showed the results of inoculation where practised and the quarantine enforced in the areas, the outbreak lasting three months, during which period 730 animals died. His conclusion was that a barrier of inoculated animals prevents spread of the disease and that a number of the deaths might be accounted for by insufficient feeding.

Mr. S. L. Symonds, the G.V.S. Selangor: It has been a great pleasure to listen to the interesting paper by Mr. Simpson. It is a wide subject which we are called upon to discuss, and one which is of interest to us all. There are one or two points which I would like to mention.

Mr. Simpson refers mainly, I think, to the importance of rinderpest from the West Coast of Siam into Northern Malaya, and some additional notes regarding the importation of the disease into what might be called Southern Malaya might be of interest. During the past fifteen years they have had thirty-two outbreaks of rinderpest in the quarantine stations, either at Port Swettenham or Kuala Lumpur; of these, thirteen were amongst cattle imported from the West Coast of Siam, sixteen amongst cattle imported *via* Singapore from the East Coast of Siam or Indo-China, and three from India.

Singapore itself is a shipping port and the conditions there vary greatly to those on the mainland where there are wide grazing areas. In Negri Sembilan in 1901 it was reported that rinderpest had again been prevalent and that it was estimated to have killed off no less than two-thirds of the buffalo stock belonging to the Malays. Since then, though there have been numerous small outbreaks, no serious epidemic has occurred.

In the adjoining colony of Malacca some severe outbreaks have occurred, however. I agree with Mr. Simpson that rinderpest is not endemic in Malaya, but that it is frequently imported generally from Siam, and also occasionally from India, and that prevention depends primarily on quarantine or, if the disease occurs outside the quarantine stations, on early detection and quick action under the quarantine enactment.

I would submit that rinderpest is one of the diseases most easily controlled by quarantine methods; broadly speaking, we might say that if we can control the movement of cattle we can control rinderpest.

Control of importation of cattle overland is obviously more difficult than by sea. One great danger appears to be the obscure form in which the disease sometimes occurs—*i.e.*, mild cases in Indian and, in some cases, Siamese cattle. The routine use of the clinical thermometer in quarantine stations may enable us to detect, or at any rate to suspect, these cases.

Another important point, which I am glad to hear Mr. Simpson mention, is " overlapping " of different shipments of cattle in quarantine stations. This is difficult to avoid and is no doubt the cause of some outbreaks spreading outside.

It may be safer to import from a country where the disease is occurring than indirectly *via* a place where overlapping occurs in quarantine stations.

As regards the prevention of the disease when outbreaks occur outside the quarantine stations, I think it will be agreed that no hard and fast rules can be laid down, as the methods employed will vary in almost every outbreak according to local conditions, topography of the country, class of animals affected, and also according to the extent of the outbreak.

When the slaughter policy is adopted, it is often a delicate question as to how far it should be continued, especially in a Malay country, as there is no doubt that Malays have an affectionate regard for their buffaloes, quite apart from their monetary value, and dislike having them destroyed, even when fully compensated. It is better to have their co-operation when dealing with an outbreak and, personally, I avoid slaughtering animals as much as possible, except the first few cases in an outbreak. In most cases, during small outbreaks, isolation sheds can be built and such animals and contacts segregated there. There is always the risk, however, of the disease being carried by attendants.

Theoretically, anti-rinderpest serum appears to solve the difficulty, but when we come to use it in the field in this country, I think the experience of most of us has been that there are many difficulties. Anti-rinderpest serum is used in Selangor outbreaks, but only on immediate contacts and in large doses, and is therefore an accessory preventive measure only.

Mr. Simpson refers mainly, I think, to the use of serum during widely-spread epidemics and to the possibility of preparing a more effective serum locally.

The preparation of serum in Malaya is purely an economic question; the arguments against the establishment of a serum station being—so far as the Federated Malay States are concerned—(1) the cost; (2) the doubt as to how far serum alone would influence the incidence of the disease. Conditions in Malaya cannot be compared to those in India and countries where the disease is endemic.

Moreover, as the disease is not endemic in Malaya, the propagation of rinderpest in a serum station might involve a certain amount of risk. This does not mean, however, that experimental work with anti-rinderpest serum would not be of great value, for it would, in fact, be essential before the local manufacture of serum was attempted.

I am very pleased to see the Veterinary Adviser to the Government of Siam present, as the question of rinderpest in Malaya is intimately bound up with the question of rinderpest in Siam.

I suggest that the encouragement of cattle breeding in the Northern States of Malaya, and keeping these States free from rinderpest, in order to make the importation of cattle from outside Malaya less obligatory, would be a big factor in lessening the incidence of rinderpest in this country and would be of great economic importance. In conclusion, I wish again to thank Mr. Simpson for his most interesting and valuable paper.

The CHAIRMAN emphasised the remarks of the previous speaker, especially as regarded overlapping. He quoted the case of Siamese slaughter animals for Perak having to be discharged from the Penang quarantine port station, walked to the station, delayed there, and then entrained for Perak after contact with overlapping consignments. He admitted the danger of human transmission of disease and the necessity, as far as possible, of preventing the mixing of cattle attendants in quarantine stations. He was not an advocate of shooting. He admitted that a re-organisation of the veterinary service would probably result in more co-ordinate working and be a possible solution of some of the present anomalies in quarantine regulations. He was in favour of the formation of a veterinary bacteriological branch, as they had several things besides rinderpest that required investigation. He was of opinion that a man who introduced rinderpest to a quarantine station, should not be compensated if destruction was carried out, but that similar procedure in other people's healthy contacts (due to overlapping) might be questionable.

Mr. J. J. FLEURY, the State Veterinary Surgeon, Kedah, regretted his inability to contribute much to the discussion on Mr. Simpson's excellent paper, owing to the fact that he had only just returned from leave. He strongly supported the use of the gun in localised outbreaks of rinderpest, but thought that serum was indicated, as a possible means of saving a percentage of animals, when the disease got out of hand. He thought that overlapping of animals in quarantine yards defeated the object of quarantine, but recognised the difficulty of remedying it in places, like Penang, where space was limited. He considered that the veterinary machinery of Malaya, as at present constituted, was not working to the best advantage for the Government, nor could it do so until properly organised and equipped with the necessary facilities for scientific investigation and treatment of diseases.

Mr. R. MACGREGOR, the G.V.S. Pahang: I wish to ask if any attempt has been made to increase immunity by simultaneous injection? This should give the advantage of working with the same strain of virus. Mr. Simpson's paper deals mainly with the buffalo (Siamese). Now it is pointed out that an Indian ox has a high degree of immunity, but does the Indian buffalo show this? The point appears to have some bearing on this question of serum strain. It is generally accepted that the Indian buffalo is as susceptible to Malayan rinderpest as is the Siamese; it would appear that the error arises not, as suggested, by trying to immunise Malayan animals with Indian serum, but by trying to immunise buffalo with ox serum. The writer supports the theory that animals may be infective before the symptoms have developed. It is the usual practice, when an outbreak occurs in a quarantine station, to move the apparently healthy contacts through the streets to the abattoir. I have not yet heard of a case where this practice has resulted in a spread, but it is common to find, on slaughtering, one or two contacts showing signs of the initial stages of rinderpest. Does this not show that the animls are not infective till the disease is well advanced? This seems to be borne out by the Province Wellesley outbreak—in most cases the animals showing symptoms were destroyed and this seems to have had good results. The paper points out that illegal movements across the Northern border must be large; yet, in spite of this, Perak has been free for twelve years. The supposition is, therefore, that most of this illegal trade is with Kedah, Trangganu and Pahang. In Kedah there is a fairly satisfactory system of yearly licensing of buffaloes and oxen and, although this is not sufficient, I think it does minimise the illegal trade. I think this is demonstrated by a comparison of outbreaks in Kedah and Pahang, and I put it forward as a valuable preventive measure.

The overlapping of consignments presents a difficulty that might be overcome by differently-planned stations. It should be possible to arrange a station so that each consignment is segregated for its period, but the difficulty of obtaining sufficent area near the port necessitates careful planning. I propose that this meeting considers plans for an ideal station as a guide.

Our principal difficulty is, I think, the ignorance of cattle owners of the quarantine regulations and the conditions and appearances of diseased animals. In Kedah, lectures have lately been given with good effect. I submit we need attractive posters on cattle disease and interesting readable pamphlets for the public.

Mr. T. W. WRIGHT, the M.V.S. Penang: The writer states that he has nothing original to offer, but I think a paper such as this, coming from one of his experience, can certainly be said to be a valuable addition to our knowledge of the disease as we encounter it in Malaya.

It is with some diffidence that I take part in this discussion, as I feel that my experience of rinderpest in the field is very small and is chiefly confined to the anatomical changes noticed in the abattoir or *post-mortem* room. The disease appears equally severe in the buffalo and local breed of cattle. I agree that Indian cattle have a strong immunity. The *post-mortem* lesions agree with the textbook, except that extreme emaciation is by no means constant in the buffalo. I do not altogether agree, in differential diagnosis, that the ingestion of salt water gives rise to symptoms and appearances of rinderpest—the absence of ulceration and catarrhal eye lesions are sufficient differentiation. The main point is that the disease is not endemic and that, if our quarantine were efficient, rinderpest should cease to exist. A land quarantine is apparently not effective; I think, however, that means should be evolved to deal with an obviously-diseased consignment that arrives

by sea. I suggest a station on an island for this purpose, which would reduce the chance of infecting existing stations. If it is conceded that rinderpest serum has not the efficacy in Malaya that it has in other countries, the reason can only be determined by bacteriological experimentation.

If the laboratory did not warrant the cost of its upkeep for serum alone, it surely has other enquiries into diseased conditions in Malaya that would balance its credit side.

H. H. TUNGKU ABU BAKAR, S.V.S. Johore, agreed with the other speakers and emphasised the need of efficient veterinary police control in outbreaks. He mentioned how efficiently this had worked in his State.

Mr. H. HAY BARCLAY, the G.V.S. Singapore, remarked that he was very fortunate, inasmuch as his imports were from Eastern ports of Siam and, though in excess of those of other Malayan ports, were more free from disease, owing to the fact that there was more supervision over imports from the East Coast of Siam than from the West. He had been only a comparatively short time in Malaya and, so far, had no experience of rinderpest, but the papers and discussions to which he had listened had been of very great interest and value to him. Singapore did not quarantine arrivals. He would like to know if the immunity of a recovered animal was a permanent one.

Mr. A. JOSEPH, the V.I. Province Wellesley (South), remarked upon the question as to whether an animal in the incubative stage of the disease was a source of infection, and drew a comparison between the incubative stage of rinderpest and of rabies in dogs.

Mr. R. V. PATEL, the A.V.S. Penang, pointed out that Siamese cattle at the Siamese port of embarkation were, after examination, allowed to remain as long as ten days between the granting of the certificate and the day of embarkation. He considered this dangerous, especially when ports could not always guarantee that they were receiving from healthy areas only. He quoted an instance of long incubation period in which, after a sea journey of four days, disease only manifested itself in a consignment after the seventh day—a period of twelve days. He asked if this extended period might not be due to a protective dose of serum received prior to embarkation.

Mr. R. P. JONES, the Adviser to the Royal Siamese Government, explained this his contribution to the discussion would be to explain to them exactly the conditions existing in Siam as regards rinderpest, together with the steps taken to combat it and the schemes proposed for its eradication from Southern Siamese ports with a view to protecting Malaya. He then read his report. [This will be published, with discussion, at a later date.—Ed.].

The CHAIRMAN remarked that this report and statement were of such interest that he proposed that a special discussion be accorded to them. The members unanimously agreeing, this discussion was adjourned to follow Mr. Simpson's reply.

Mr. SIMPSON, in reply, stated: A man who has the temerity to present a paper on a debatable subject stands to be "shot at" and I must confess I expected to be "well riddled" when you had finished with me. I am agreeably surprised to find how nearly our opinions coincide on the really debatable points. I should have preferred to deal *seriatim* with the points raised by the various speakers, but as so many of them have debated the same subject it will be difficult. I will, however, start with Mr. Moir. The first point he raises is that import will be rendered safer by establishing a veterinary department for Malaya, the head of which will have control of animal landing. We all agree that this is the first essential to a success-combination. It has been advocated and until it is an accomplished fact we must make the best of a bad job.

With a view to avoiding the present difficulty of overlapping at port stations, Mr. Moir advocates that their control be vested in one man, who should decide where consignments are to be landed. I have no wish to be that one man under present conditions. Theoretically it is sound, but, from my experience, I do not think it is practicable, as far as Penang is concerned. It is unreasonable to expect a dealer whose animals are consigned to Penang to take them to Port Weld, Teluk Anson, or Port Swettenham and *vice versa*, because a station cannot receive them owing either to a full station or danger of overlapping. Frankly, I do not see how overlapping is to be avoided at ports with the present irregular arrivals of consignments; until we can in some way combat this irregularity I am afraid it must continue. His next point is that, in his experience, spread of the disease is practically always by movement of cattle. We shall all agree that this movement spreads disease, but I still claim that the human being is a very strong factor to be dealt with and not to be lost sight of, either associated with or without movement of animals. I agree that the census is all important, but I think it requires more police assistance than he had in his outbreak and I prefer to place a larger area under restriction in the first place than he does. In the report of his outbreak, Mr. Moir apparently shows that his experence with serum has been unfortunate—his table shows that in the Kubang Haji experiment, out of a total of twenty-five inoculated and exposed to infection, twenty-two died. He adds that it was evident that the disease in inoculated animals was of a much milder type—this, I believe, is accepted as one of the advantages of serum—*viz.*, that it modifies the intensity of attack. I do not dispute this, but I think the results of Mr. Moir's Kubang Haji experiment tend to prove that the strain of this Muktesar serum which he used on buffaloes does not afford the protection so completely obtained by other countries. Mr. Moir takes exception to my suggestion that outbreaks in Malaya are "appalling" or "decimating." I used these remarks mainly in connection with the Pahang outbreak and incidentally to that in Kedah. In the former, Mr. Ford, the then G.V.S. Pahang, informed me that 90 per cent. of the buffaloes on the lower stretches of the Pahang river were lost—a statement partially confirmed by the local Malays when I took over in 1913. I submit, with due deference, that if the above is correct (and Mr. Symonds here may be able to substantiate) the adjective and verb are not unduly stressed. Siam, which has been unable to cope with rinderpest till lately, shows in the last eleven months a return of nearly 13,000 and the Siam Veterinary Adviser has told you to-day that he estimates the annual deaths at 100,000 (in a country where it is endemic). It only shows what the ravages are likely to be in a non-endemic country like Malaya if the disease gets out of hand. As regards Kedah, I think the known loss of 10,000 (apart

from the unknown) buffaloes justifies the appellation "serious," if not "appalling."

Mr. Moir shows that thirty-seven buffaloes and three cattle were inoculated at Blanja Kiri on July 2nd, and precautions taken to prevent infection. Of these, three buffaloes and one bull only died. The disease had then existed over two months; it is possible that the virulence was decreasing and there is also the possibility that the animals which did not contract the disease were immune. I accept his statement that this barrier of inoculated animals prevented the spread of the disease. With this view and with Mr. Moir showing that 96 per cent. of the animals failed to contract the disease, it would appear that the serum may also act as a preventive at certain stages and is thereby doubly valuable to us. He concludes by hoping that the suggestion that serum should be produced locally should not go forward as a recommendation, on the ground of expense. Mr. Moir and I differ on this point. I submit that if we, as professional men, consider the local production of serum advisable to control the ravages of disease, it is our duty to represent it to Government. Having done so, our duty ends—the question of whether expense is deterrent is for the financial branch to decide. I have not advocated the erection of a station solely for the production of rinderpest serum—my advocacy is the creation of a veterinary bacteriological department; only one of whose functions could be the production of such a serum. There are many other branches of veterinary science which would usefully employ such a department. I very much regret Mr. Moir's absence to-day; he is our senior officer and this is his last chance of meeting those he has not met before, as he retires in May. It is extremely unfortunate that he could not be present for this meeting—his opinions after twenty-seven years varied experience of Malaya would have been of value to us all.

I am pleased to see that we are in agreement on the essential points and although there is a divergency on the question of serum inoculation, I attribute it to the fact that, although there is a desire on the part of us all to make serum a powerful weapon for attacking rinderpest on account of the success in other countries, we feel that some of us, from our experience of it, should not be justified in doing so until we have first ascertained the vagaries of its effects in Malaya. I am at one with the meeting in deprecating shooting if it can be avoided. I think the instances I have given have shown its efficacy even in an outbreak where, I should say, it was not justified, perhaps; but all the conditions surrounding its adoption are against it except on very special occasions which we all recognise. I was glad to hear the very pertinent question raised by Mr. Macgregor—I think the simultaneous injection has not been used by veterinary officers in this country: the danger, of course, is the creation of fresh centres of infection, but I admit his argument is sound when he suggests that we should then be working with the same strain—still, I do not advise it for Malaya. He has also raised an important point as to whether incubation animals can transmit the disease—he has quoted a theory and supported it by a procedure allowed in Penang which might substantiate it. I can only say that animals in the incubative stages of any disease should be considered dangerous and that the danger increases as the incubation period lessens. So far I have been luckly in movement of my in-contact animals. I am in agreement with him that more publicity and education of cattle owners are necessary, but the cattle dealer, who is often the principal offender, requires very little education in detecting disease. Mr. Short has pointed out a danger that he and I have to face to keep the trade in slaughter buffaloes going for Perak—it is a danger, I admit, but until we can get uniformity of action, which is not possible under present conditions, we must accept the risk. The S.V.S. Kedah has quoted the efficacy of the "yard movement" system in a station and has given an instance of an outbreak in Padang Besar Station shortly after apparently healthy animals (which did not subsequently develop disease) had been discharged to Perak. The G.V.S. Perak (South) points out that this argument does not support the "yard movement" theory, as all the animals were rounded up and slaughtered before the ten days period of incubation. My idea of quarantine is certainly a fenced-off yard station, but I do not advocate the daily passing on from one yard to another. I prefer to keep batches in one "yard" till the expiry of their quarantine. I agree with S.V.S. Johore that adequate and strict police supervision is the only way to assure effectiveness of quarantine areas. The M.V.S. Penang has, I think, misunderstood me; I meant to imply that the early lesions on *post-mortem* might be identical with those of saltwater poison. I quite admit that the ulcerative stages would decide a point in doubt. His point, that an island should be provided for diseased consignments, is sound, and until we have one we shall not be safeguarded. I agree with him that we do not see much emaciation in buffalo rinderpest carcases in Penang—the disease is much too rapid. Mr. Patel has pointed out that the inoculation with serum of suspected animals may prolong the disease; from one instance, I am of opinion that it may prolong the incubation period and it may be dangerous, in this case, in animals for export.

A vote of thanks having been passed to Mr. Simpson, the meeting adjourned and on resumption the discussion on Mr. R. P. Jones' paper was opened.

(*To be continued*).

Renfrewshire Veterinary Inspectorship.

At a meeting of representatives of the Upper and Lower District Committees of Renfrewshire, it was reported that communication had been made to the various burghs in the county inquiring whether the burgh authorities would be prepared to make use of the services of a whole-time veterinary inspector, should such be appointed for the county, to carry out the duties under the Milk and Dairies Act and the Tuberculosis Order within the burghs, on terms to be arranged. Replies were submitted to the effect that the burghs of Greenock, Paisley, Barrhead, Johnstone, and Renfrew have appointed part-time inspectors of their own, and that the burghs of Port-Glasgow and Gourock are favourable to an arrangement whereby the services of the county inspector will be available within the burghs, subject to satisfactory terms being arranged. There was also submitted a letter from the County Clerk, Buteshire, asking whether it would be possible to arrange for the veterinary inspector being available for the county of Bute. The meeting agreed to adjourn consideration of the appointment of a whole-time veterinary inspector, the clerk being instructed in the meantime to obtain information as to any whole-time appointments made and salaries paid in other counties.

The Veterinary Record.
26th June, 1926.

THE SANITARY OFFICERS ORDER, 1926.

The Sanitary Officers Order recently issued by the Ministry of Health became operative on the 1st June. For the most part it concerns the Medical Officer of Health and the Sanitary Inspector. The duties of these Officers are defined, as well as the conditions subject to which they may be appointed. The Order contains one clause, however, which is of interest to the veterinary profession. It is to the following effect: "Provided that if the local authority employ a veterinary surgeon for purposes connected with the inspection of meat, they may, with the approval of the Minister, appoint him as a sanitary inspector for the purpose only of exercising the powers and duties of such an officer in relation to meat, notwithstanding that he does not possess one of the qualifications prescribed by this Article" (*i.e.*, the qualifications prescribed for sanitary inspectors).

Under the Town Improvements Clauses Act, 1847, a local authority may quite competently appoint a veterinary surgeon to perform the duty of meat inspection but, in practice, local authorities, when making such appointments, appear to overlook this Act, and to be guided by the terms of Sec. 116 of the Public Health Act of 1875. In consequence, the impression prevails widely in England and Wales that in order to confer on the veterinary surgeon the statutory authority to inspect or to seize meat, he must be appointed a sanitary inspector. This position can only be remedied by general legislation, and we must await an appropriate opportunity to press for the inclusion, in any new public health Bill which may be submitted to Parliament, of a clause giving recognition to the veterinary surgeon in relation to the inspection of meat in England similar to that which has been enjoyed by the profession in Scotland since the passing of the Public Health (Scotland) Act, 1897. In the meantime, no effort is being spared to prepare the ground for this action.

Obviously, an Order of the Ministry of Health cannot override the position as laid down in general legislation. It might be suggested that the clause in the Sanitary Officers Order which authorises the appointment of a veterinary surgeon as a sanitary inspector for the purposes of meat inspection, lends support to the belief that this procedure is essential, but it seems clear that it has not been drafted with this object. Its effect would appear to be to strengthen the position of those officers who hold such appointments, or who may in the future be so appointed, since appointments are to be subject to the approval of the Minister, and can only be terminated with his consent.

In a covering memo., which accompanies the issue of the Order, the Ministry of Health express the opinion that "any Veterinary Surgeon so appointed should possess a diploma in veterinary State medicine, or have had special experience in practical meat inspection." It may be noted that the Order stipulates for the possession of certain qualifications as essential for all future medical officers and sanitary inspectors. The medical officer must hold a diploma in sanitary science, public health or State medicine, or have had not less than three years previous experience of the duties of a medical officer of health. The sanitary inspector must hold one or other of the qualifying certificates specified in the Order. So far as the veterinary surgeon is concerned, the Ministry only makes a recommendation as to the possession of a post-graduate diploma or specialised experience, but it is not too much to predict that the recommendation of to-day will become a requirement of to-morrow.

CLINICAL NOTES:

"Shivering" in Cattle.

By P. J. Howard, F.R.C.V.S., Ennis.

I wish to direct attention to the fact that we have in cattle an affection or disease exactly similar to that which we recognise in horses as "shivering."

I cannot, however, find any reference to this affection in cattle in old or current veterinary literature, or in the teaching or writings of any of our modern veterinary authorities.

The disease is seen more commonly in cows—big cows, just as in big horses. There are all the orthodox symptoms as in the horse: the tendency to unbalanced movement of the hind limbs on being turned around; the involuntary, jerky, back shift of each hind leg on being allowed to stand—thus showing the animal in a stretched or extended position; the quiver of the tail; the apparent stretching, tension and rigidity of the femoro-tibial muscles and of the neck, especially when about to drink water from a low trough or bucket on the ground.

Some old cowmen call such cows "stretchers" or "shakers," and it is known amongst them that the symptoms are much more aggravated after a rail journey.

The matter is of importance in the examination of pedigree cattle, as it is likely, as in the horse, to be hereditary. I have seen several cases, but as I have never heard the matter referred to in professional circles, I thought I would draw attention to it.

Restraint in Cage Birds.

By D. BUCHANAN, M.R.C.V.S., D.V.S.M., Edinburgh.

As the parrot is one about which the practitioner is occasionally consulted, I would be much obliged if some member having experience of these birds could suggest an effective method of restraint to prevent interference with a healing wound. During the last four months a parrot with a healing wound under the left wing, to which I was called, has used its beak repeatedly to tear off the scab, with resulting hæmorrhage. At my suggestion the owner, who is skilled in woodwork, succeeded in making two patterns of light, wooden "Elizabethan collars" made in two sections, accurately fitted with small wooden pegs, over which a little glue was smeared previously to fit the two halves together around the neck of the bird. As the first pattern of collar proved to be too heavy, the width of the collar was increased at the expense of the thickness, so as to offer a greater obstacle to overcome. This attempt was, however, successful only for a week, when the parrot, finding that access to the wound was no longer possible from the front, succeeded in reaching the scab from behind, and appeared to be highly delighted when he had once more wrenched it away. The antiseptics used on the wound include sulphur and salicylic acid ointment, hydrogen peroxide, iodoform and boric acid, styptic collodion, tr. ferri perchlor., "new skin," lunar caustic, and lastly tannic acid with dry dressing. For months, until quite recently, the bird has shown a habit of continually pulling the feathers out, especially over the chest region. The repeated hæmorrhages, together with the enforced wearing of the collar, have not improved the general condition of the bird, and were it not for its marvellous talking accomplishments and the sentiment of the owner it would certainly have long since gone the way of all flesh.

BAILY'S MAGAZINE.

"With great regret," says *The Times* of June 17th, "we learn that with its June number *Baily's Magazine* ceases to exist. For more than 60 years it has been the friend of sportsmen of all kinds; and the green covers—green as the turf on which most good sports are played—have ever been welcome in clubs and country houses, in colleges, and (not least) in drawing rooms. But it seems that *Baily's* was too hard hit by the loss of its old supporters in the war to be able to recover its position; and it now says "Farewell" in an editorial article which, with modest pride, sums up its own high achievements and those of its predecessor, the old *Sporting Magazine*. The biographical sketch this month is of Major Sir Herbert Robin Cayzer, M.P., and the other articles and illustrations are of the true, good, *Baily* kind."

ABSTRACT.

(Miscellaneous Anthelmintic Investigations. Maurice C. Hall and Meyer Wigdor. *Journal American Veterinary Med. Assoc.*, Vol. 22, No. 2.)

This paper makes available results of experiments carried out in 1917 and 1918, when a large number of substances was examined as to anthelmintic efficiency for various worms. The method of examination adopted by the authors was to administer varying doses of the substances to dogs, with or without purgatives, and to note carefully the number of worms passed in four days. The animals were then killed and, by comparing the number found *post-mortem* with the previous number, the percentage efficiency was calculated. In the case of a number of substances, negative results were obtained, but they would appear worth recording, since information to the effect that a thing is not of value may save others from wasting time, and affords a basis for answering many questions as to their probable value. The first group investigated were the hydrocarbons and related compounds. Cineal, terebene, xylol, toluol, turpentine, eucalyptus, limonene and kerosene were tested against ascarids as the test-worms. *Data* are given showing the following results:—Terebene, xylol, toluol and spruce turpentine have some ascaricidal value when the dose rate is ·2 c.c. per kilogram live weight, but it is not sufficiently marked to make them compete with effective drugs, such as chenopodium and santonin. Oil of eucalyptus, limonene and kerosene seemed to have no ascaricidal value. All these compounds are either ring derivatives, or contain ring derivatives of benzene or hexahydrobenzene, but the tests did not indicate any correlation between anthelmintic efficiency and chemical composition of the substances. The authors suggest that the open-ring compounds—halogen derivatives of methane, ethylene, etc.—might be further searched for other possible anthelmintics, especially for hookworm remedies.

In the second part, critical tests were made on tapeworm remedies, proprietary substances as well as standard drugs being tested. Again, the same methods were adopted and results are given which show kamala and male fern to be fairly dependable. Fluid extracts are not recommended. Freshly powdered areca-nut had an efficiency of 50 per cent., as it removed all tapeworms from two dogs and none from two others. Arecoline hydrobromide was a partial failure in the majority of cases, while pelletierin tannate was estimated 0 per cent. effective. Here the authors remark that dose-rate and best conditions for administration need investigation. Chenopodium is stated to be 100 per cent. effective for ascarids with a dose of ·1 c.c. per kilogram. It is not dependable for hookworms and has no value for tapeworms. Miscellaneous substances were also tested, including latex of the fig, pyrethrum, beta-naphthol, carbonbisulphide, chloretone, Fowler's solution, barium sulphate, mineral oil and the cresols.

The results of these tests show that none of these substances had any anthelmintic value for dogs, except Fowler's solution and the cresols. Neither of these drugs is recommended; the former acts slowly, while the cresols have an irritant effect on the gastro-intestinal tract. Chloretone, on theoretical grounds, might be found useful in subsequent tests.

W. L. S.

DIVISIONAL REPORT.

Lancashire Division.*

A general meeting of the Lancashire Veterinary Medical Association was held at the Grand Hotel, Aytoun Street, Manchester, on April 22nd, 1926, at 3-0 p.m. The Chair was taken by the President (John Holroyd, Esq., F.R.C.V.S., D.V.S.M.), and other members present were Messrs. J. Spruell, T. Wilson, E. H. Curbishley, J. H. Wright, G. Mayall, C. T. Trevers, W. Woods, H. Raynor Hewetson, A. W. Noel-Pillers, H. T. Matthews, J. H. Lomas, F. G. Edwards, R. Lovell, J. D. Whitehead, J. Hall, W. Walker, H. H. Lord, and J. W. Brittlebank.

Visitors.—Messrs. Dennis Lloyd-Jones and R. S. Smyth.

Apologies for unavoidable absence were received from Messrs. J. Abson, T. Hare, S. H. Gaiger, J. McKinna, Warwick Fowle, P. T. Lindsay, and T. Eaton-Jones.

The minutes of the last meeting were taken as read and were confirmed.

The SECRETARY read a letter received from the Secretary of the National Veterinary Medical Association with regard to the appointment of Chief Constables as Chief Inspectors under the Diseases of Animals Acts, stating that, in view of a further Circular Letter issued by the Ministry of Agriculture and Fisheries pointing out that this matter was now left to the discretion of local authorities, the Council of the National Veterinary Medical Association now proposed taking no further action.

A letter was read from the Secretary of the Royal Sanitary Institute giving particulars of the Royal Sanitary Institute Congress to be held in London, July 5th week, and inviting the Association to send a delegate. Major J. H. WRIGHT proposed, and Mr. J. D. WHITEHEAD seconded, that Mr. E. J. Burndred be authorised to attend as the representative of the Lancashire Division. This was agreed.

The SECRETARY read a report of the Council of the L.V.M.A. with reference to the withdrawal of an Election Circular, and Mr. J. H. LOMAS proposed, and Mr. G. MAYALL seconded, that the action of the Council be approved. The proposition was carried unanimously.

Nomination.—Mr. D. E. Orr, M.R.C.V.S., of Manchester, was nominated for membership.

The PRESIDENT then invited Mr. Thomas Wilson, M.R.C.V.S., to give his paper on "Vaginitis in Cattle."

* Received on June 8th, 1926.

The paper was well discussed, and was followed by one on "Skin Diseases of the Dog associated with *Demodex folliculorum*," by Mr. H. R. Hewetson, which also produced a good discussion.

[Both these papers, with the discussions upon them, will be found at the commencement of this issue of the *Record*.—Ed.]

Mr. J. D. WHITEHEAD said that a vote of thanks was due to the readers of the two papers that afternoon. The subjects discussed were very interesting, and a most enjoyable afternoon had been spent. He had great pleasure in proposing a vote of thanks.

Mr. W. WOODS, in seconding, remarked that the papers were far ahead of anything he had read when he was in practice.

The vote of thanks was accorded with enthusiasm.

J. SPRUELL, Hon. Secretary.

NOTES AND NEWS.

The Editor will be glad to receive items of **professional interest** for inclusion in these columns.

Diary of Events.

June 21st—26th.—D.V.S.M. Examination.
" 30th.—**R.C.V.S. Annual Dinner,** Hotel Victoria, London, 7-30.
July 1st.—R.C.V.S. Committee Meetings.
" 2nd.—R.C.V.S. Committee and Council Meetings.
" 2nd.—Meeting of the Central Division at Aldershot.
" 9th.—R.C.V.S. Written Examinations.
" 13th.—R.C.V.S. Oral Examinations commence in London.

July 27th-30th.—N.V.M.A. Congress at Dublin.

R.C.V.S. Annual Dinner.

WEDNESDAY, 30TH JUNE, 1926.

Applications for tickets for the Annual Dinner should be made AT ONCE to enable the Dinner Committee to reserve places.

Send names, including names of guests, together with remittance (tickets, 12/6) to the Secretary, 10 Red Lion Square, London, W.C.1.

R.A.V.C. Annual Dinner.

The following is a list of officers who accepted invitations for the above dinner, which was held on Friday, the 18th June, 1926, at the Hotel Cecil:—

Major-General H. T. Sawyer, C.B., D.S.O., Director-General, Army Veterinary Services, presiding.

Major-Generals:—Sir Layton J. Blenkinsop, K.C.B., D.S.O., Colonel Commandant; Sir Frederick Smith, K.C.M.G., C.B., F.R.C.V.S.; and Sir John Moore, K.C.M.G., C.B., F.R.C.V.S.

Colonels:—W. S. Anthony, C.M.G.; and A. G. Todd, C.B.E., D.S.O.

Lieutenant-Colonels, etc.:—J. J. Aitken, C.M.G., D.S.O., O.B.E.; F. S. H. Baldrey, C.M.G., F.R.C.V.S.; E. B. Bartlett, O.B.E.; T. E. Burridge; A. E. Clarke; H. C. Dibben; O. S. Fisher, O.B.E.; H. Gamble, O.B.E., F.R.C.V.S.; J. J. Griffith, D.S.O.; F. D. Hunt, O.B.E.; W. A. McDougall, D.S.O., O.B.E., F.R.C.V.S.; H. S. Mosley, D.S.O.; W. E. Schofield, O.B.E.; F. C. Stratton; W. H. Walker, D.S.O., O.B.E.; and A. J. Williams, D.S.O., F.R.C.V.S.

Majors.—J. O. Andrews, D.S.O.; B. R. Body; A. F. Castle, F.R.C.V.S.; J. A. Connell, F.R.C.V.S.; C. Davenport, O.B.E., F.R.C.V.S.; P. W. Dayer-Smith, O.B.E.; H. E. Gibbs, D.S.O.; R. A. Gooderidge, O.B.E.; F. B. Hayes, O.B.E.; E. P. V. Hearne, O.B.E.; A. Hodgins, D.S.O.; H. C. Jagger, O.B.E.; C. H. Hylton-Jolliffe; H. Kirby, D.S.O.; A. S. Lawrie; V. C. Leckie, D.S.O.; T. Lishman; W. St. J. F. Macartney; R. W. Mellard, D.S.O.; C. E. Neill; G. C. B. Rees-Mogg, O.B.E.; J. S. Nimmo, D.S.O.; F. C. O'Rorke, C.M.G., F.R.C.V.S.; F. W. Pawlett; H. Peele; J. J. Plunkett, O.B.E.; J. F. Rankin; A. Robb; W. H. Simpson; P. J. Simpson, D.S.O., F.R.C.V.S.; S. L. Slocock, M.C.; W. H. Thomas; C. H. S. Townsend, O.B.E., M.C.; E. G. Turner, D.S.O.; L. M. Verney, D.S.O., F.R.C.V.S.; and T. E. Campey, M.B.E.

Captains.—F. J. Andrews; R. E. Bond; W. D. Connochie; P. Howard; H. J. Hughes, M.B.E.; A. J. Kelly; W. H. J. Kirk; B. W. J. Nicholas; C. S. Northcott; J. O'Carroll; G. E. Oxspring; J. T. Ives; K. S. Simpson; R. T. Smith; J. Southall; and G. F. Watkins.

Lieutenants.—R. E. C. Bullen; P. C. W. Creagh; F. W. Goodall; J. S. Kingston; E. S. O'Kelly; and A. J. Warburton.

Lieutenant-General Sir Walter Campbell, K.C.B., K.C.M.G., D.S.O., Quartermaster-General to the Forces, was the guest of the evening.

Foot-and-Mouth Disease Among Pigs.

Outbreak near Crewe.

"The appearance of foot-and-mouth disease on a small holding at Coppenhall, Crewe, has," says *The Times*, of Wednesday last, "greatly alarmed Cheshire farmers and cattle dealers generally.

"Following on the reporting of suspected cases in a herd of pigs, an inspector from the Ministry of Agriculture visited the holding yesterday and certified 13 animals as being affected with the disease. The pigs, which were purchased at a Market Drayton auction, have been on the premises about two months. There is no other stock on the farm. Movement of stock has been restricted within a radius of 15 miles of the outbreak, and several markets will be affected, including the big Crewe auction."

Obituary.

Sir Henry Morris.

We regret to announce that Sir Henry Morris, Bart., one of the founders of the Imperial Cancer Research Fund, and a former President of the Royal Society of Medicine, died on Monday of last week, aged 82, at his residence in Connaught Square, W.

"At the beginning of the present century," says the *Evening News*, "Sir Henry was one of the finest surgeons in London, noted for his success in operations on the kidneys.

"Some years ago he retired from active practice, but he remained hon. surgeon to the Bloomsbury Dispensary, a post he had held for 50 years.

"The establishment of the Imperial Cancer Research Fund in 1902 followed a suggestion made to Sir Henry by a friend. He took up the matter and obtained the support of the Royal Colleges of Physicians and Surgeons.

"Sir Henry was the first hon. treasurer, and continued in that capacity till 1912, when he was appointed a vice-president.

"From 1893 to 1914 he was a member of the Council of the Royal College of Surgeons, and was President from 1906 to 1909. He was President of the Royal Society of Medicine from 1910 to 1912.

"A baronetcy was conferred on him in 1909, and he leaves no heir."

* * * * *

The Late Captain R. D. Williams.

"It was with deep regret," says *The Cambrian News* of May 28th, "that the news was received of the death from septic pneumonia at the age of fifty-five years, of Captain R. D. Williams, M.R.C.V.S., Penylan, Great Darkgate Street, Aberystwyth, one of the town's most popular inhabitants. He had been ill for nearly three weeks.

"Captain Williams, who was very well known, was the son of the late Mr. and Mrs. David Williams, Maesnewydd, Swyddffynon. After early education at Ystrad Meurig School, and also at Old Bank School, Aberystwyth, he entered the University College of Wales, Aberystwyth, and later became a student at Edinburgh Veterinary College, where he obtained the degree of M.R.C.V.S. A few years later, Captain Williams came to Aberystwyth, where he built up an extensive practice, which he carried on for the past twenty-eight years.

"He was inspector under the Ministry of Agriculture; meat inspector for the borough of Aberystwyth; county veterinary surgeon; lecturer in veterinary science at the Agricultural Department of the University College of Wales, Aberystwyth; was veterinary surgeon at most of the local shows; and was also chairman of Aberystwyth Horse Show Society. He had been a Freemason for many years.

"After having served as a lieutenant with the Volunteers and Territorials, he obtained the rank of captain in April, 1914. During the war, Captain Williams, who was the first officer from Aberystwyth to go overseas, served with the R.A.V.C., saw active service in France from 1914 to 1918, and was demobilised in 1919."

* * * *

Dawson, Lisle Arthur Finch, Somerton, Somerset. Graduated, London, 20th December, 1907. Died, 18th June, 1926.

Foreign Infected Pork.

In the House of Commons on the 16th inst., Mr. W. Thorne asked the Minister of Agriculture whether among the instances of pork infected with foot-and-mouth disease,

cited in the statement of his department on June 2nd last as constituting the foundation for the Order prohibiting the import of fresh meat from the Continent, there was found any case of pigs dressed and scalded in the manner in which Continental pigs have been arriving at Smithfield Market for over 50 years.

Mr. Guinness (Minister of Agriculture): Lesions of foot-and-mouth disease were found only in carcases which had not been scalded or the hair scraped off them. If a foreign pig suffering from foot-and-mouth disease were dressed and scalded in the usual way its carcase would be capable of introducing the disease to this country, although the scalding and the removal of the outer skin by scraping might make it difficult to discover the lesions of the disease.

In reply to a further question by Mr. Thorne, Mr. Guinness said: Chinese pork has been imported into this country for many years, but I am not aware that special prominence has been given to Chinese pork in consequence of the recent Order. Chinese pigs are imported in calico cloths, but under the Foot-and-Mouth Disease (Packing Materials) Order of 1925, such wrappings must be thoroughly sterilised before further use. The Ministry has at present no evidence that Chinese pork is capable of disseminating foot-and-mouth disease on arrival in this country.

CORRESPONDENCE.

Poor People's Clinics.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—Owing to the large number of speakers upon this question, and the unusually crowded agenda, I was prevented from giving my views at the last meeting of the Central V.S. I was, however, a most interested listener, as the subject of the discussion was one which I took up personally in 1924 when I entered into correspondence with the P.D.S.A. This correspondence was so unsatisfactory that I sent it to the N.V.M.A., from whence it later passed to the Council of the Royal College. Whilst entirely in agreement with the principle of establishing clinics where animals of the genuine poor may be treated free, I feel convinced that many thousands of animals are annually treated which belong to those who could easily afford to pay. Instead of this Society instilling the idea into the public that free treatment is a privilege, they do their utmost almost to implore people to patronise them and, being in such need of patronage, I am very sure that no questions will be asked or investigations made into the clients' ability to pay. In this way, such Societies come into strong competition with all practitioners who are carrying on a legitimate business. Dr Miller, in *Veterinary Medicine* (Chicago), observes: "It is evident that veterinarians are called upon to assist in holding these clinics, giving free treatment for the poor, just long enough for the institutions to establish themselves, when they become the practitioners' most dangerous competitors." From all that I have been able to ascertain, however, the P.D.S.A. have so far taken little or no advantage of skilled veterinary aid, except to persuade some veterinarian to give lectures and demonstrations to laymen in order to teach them something of surgery and medicine and, incidentally, to create "quacks." I think that no lecture should be permitted to be delivered by members of the R.C.V.S. with the avowed or obvious purpose of instructing the populace how to do without the services of a veterinary surgeon. Nobody reading the propaganda of the P.D.S.A. could fail to detect the definite attempt to lead the public into believing that their assistants are veterinary experts; one has met with many instances, but none so blatant as the allusion in the *Sunday Express* (April 18th) to their "*girl vet.*" There is not the smallest doubt in my mind but that the charitable public are hoodwinked into believing that the *best obtainable* is afforded the stricken animals sent to this institution. They know little or nothing of the true facts and it is regrettable that humanely-minded people with bulky, open purses should be so grossly misled. There is ample evidence obtainable (I myself have some) that actual cruelty is not infrequently perpetrated through wrongful diagnosis and hopelessly faulty treatment, and it is that to which thousands of people are annually subscribing! In my opinion, no veterinary surgeon should lend his name to any Society which permits any treatment of animals to be carried out other than by a veterinary surgeon, or by an assistant under his *immediate* supervision. This would mean the employment of a surgeon in every locality where a clinic is installed. And why not? Do not these Societies grow more and more rich and powerful year by year? Are we to believe that it is a question of expense? I shall never believe it. The President of the Central Veterinary Society extended invitations to all the well-known "Animal Societies" to send representatives for the purpose of hearing and joining in the debate. It is particularly significant that no representative from the P.D.S.A. was present. In fact, the invitation was declined by Mrs. Dickin (its Director) on the ground that no wise purpose could be served. I hold the view that many of these voluntarily-supported animal institutions are redundant; that by overlapping, an unnecessary and heavy expenditure is incurred in establishment charges, which would better be expended in actual relief of suffering. New Societies spring up like mushrooms in the night, and all seem easily able to secure the name and patronage of some distinguished personage to help them in their appeals for money. The R.S.P.C.A., as the most powerful, most useful and best organised society in the country, could very well perform all the tasks now undertaken by the smaller fry, and most probably excel in their execution.

I wish it were possible for the R.C.V.S. to take some step to ensure that no advice or treatment should be meted out by these societies unless they were certain that the applicant was genuinely deserving. The whole question is one, in my view, which can usefully be dealt with by the Organising Committee of the N.V.M.A. and, for my part, I shall make representation to the proper quarter.—Yours faithfully, HAMILTON KIRK.

67 Wigmore Street, W. 1.
June 21st, 1926.

R.C.V.S. Council Election.

TO THE EDITOR OF THE VETERINARY RECORD.

Sir,—I desire, through your medium, to thank most heartily those members of the profession who so kindly gave me their support in the recent election of members to the Council of the R.C.V.S.—Yours faithfully, GEORGE W. DUNKIN (Major).

National Institute for Medical Research,
Farm Laboratories, Mill Hill, N.W.7.
June 19th, 1926.

The Editor acknowledges the receipt of the following:—

Report of a meeting of the Derbyshire Division, from Mr. O. V. Gunning, Hon. Secretary.

Communications from Mr. A. Gofton and Professor B. Gorton.

National Veterinary Medical Association of Great Britain and Ireland.

EDITORIAL OFFICE: 10 Gray's Inn Square, London W.C.1.

All communications relative to the literary side of the Veterinary Record must be addressed to the Assistant Editor, "Veterinary Record," 10 Gray's Inn Square, W.C.1

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The Veterinary Record

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July-Dec.

Professional Advertisements.

These will be received up to Wednesday morning. Five lines or under, 3/6; or two inserions, 5/-; for three, 6/6, Each line above five—first insertion, 8d.; after first, 4d. Average—seven words in a line.

These Advertisements will not be inserted unless prepaid, and if replies are to be received at this office, an extra shilling must be included.

Office Address: 10 GRAY'S INN SQUARE, W.C. 1.

Notices.

Western Counties Division.

THE next meeting of this Division will be held at the Great Western Hotel, Taunton, on Thursday, the 15th July, 1926, at 2-0 p.m. The President, A. G. Saunders, Esq., M.R.C.V.S., will occupy the Chair.

Agenda.

1. Routine.
2. Correspondence.
3. Presidential Address.
4. Paper, "Veterinary Biological Products," by Dr. J. Stanley White, M.R.C.S., L.R.C.P., Ph.C.
5. Any other Business.

Members of adjoining veterinary associations will be cordially welcomed. Tea after the meeting, by the kind invitation of the President.

R. Barons Nelder,
Hon. Secretary.

Royal Army Veterinary Corps.

Examination for Commissions.

AN examination for Commissions in the Royal Army Veterinary Corps will take place in August, 1926, and competitors will be interviewed by the Director General, Army Veterinary Services, before the examination takes place.

Intending competitors can obtain the necessary forms of application from the Director General, Army Veterinary Services, War Office, London, S.W. 1.

North Wales Division.

A MEETING will be held at the Owen Glyndwr Hotel, Corwen, at 1-30 p.m. on Friday, July 16th, when the President, J. E. Miles, Esq., Caersws, will be in the Chair.

Agenda.

1. Routine.
2. Address by the President.
3. Remarks on (*a*) "Pervious Urachus and its Sequelæ," by Mr. Richard Jones; (*b*) "Post-pharyngeal Abscesses," by Mr. C. W. Cartwright.
4. Paper by Mr. H. M. Salusbury, M.R.C.V.S., D.V.H., Corwen: "A Few Surgical Cases in Ruminants."
5. Any other Business.

It is hoped that members will make an effort to attend, and visitors are cordially invited.

Please bring specimens.

J. H. Wynne,
Hon. Secretary.

Mallein and Tuberculin.

MEMBERS of the Profession may obtain Mallein and Tuberculin on application to the Principal, Royal Veterinary College, Camden Town, N.W. 1, on the following terms: In bottles, 6d. per dose; minimum quantity supplied, two doses. In hermetically sealed tubes containing one dose each (specially suitable for use abroad), 1/- per dose. Concentrated (for the ophthalmic test in sealed tubes, 9d. per dose.

Notices.

Southern Branch.

IT has been decided to defer holding the suggested meeting of the Presidents and Secretaries of Divisions of the Southern Branch, pending the decision of the Council upon the recommendations of the Organising Committee, which will meet shortly for the specific purpose of considering the question of the re-grouping of Divisions.

G. P. Male,
Hon. Secretary.

Appointments Vacant.

Ministry of Agriculture and Fisheries.

APPLICATIONS are invited for the post of Director of the Ministry's Veterinary Laboratory at New Haw, Weybridge, Surrey. Salary £800 per annum, rising by annual increments of £25 to £1,000 per annum, *plus* Civil Service Bonus current from time to time. The present bonus on £800 is £223 9s., making a commencing salary of £1,023 9s. per annum.

Candidates must be members of the Royal College of Veterinary Surgeons and should not be more than fifty years of age. They should be trained in pathology and have experience of the general pathology, bacteriology and protozoology of diseases of animals, and have been engaged for not less than five years in approved research work in these subjects.

Forms of application may be obtained from the Secretary, Ministry of Agriculture and Fisheries, 10 Whitehall Place, S.W. 1., and should be returned not later than 1st November, 1926.

Any applicant abroad need not apply on a prescribed form, but should give particulars in writing of his age, place of birth, training and experience together, if possible, with copies of testimonials and references to any books published.

Burma.

THE Government of Burma require the services of a Specialist Officer for the Civil Veterinary Department, to carry out researches in connection with the diseases of elephants and draught buffaloes employed in the forests in Burma.

Five years' agreement. Pay according to qualifications and experience, subject to a maximum consolidated pay not exceeding Rs. 2,000 a month. First class passage to Burma and return passage on satisfactory termination of agreement. Provident Fund. Strict medical examination.

Forms of application and further particulars should be obtained from the Secretary to the High Commissioner for India, 42 Grosvenor Gardens, London, S.W. 1. Last date for receipt of applications, 24th July, 1926.

WANTED, as soon as possible, qualified assistant, for mixed Practice. Able to drive car. Full particulars of references and salary required. Reply V.R. 92, 10 Gray's Inn Square, W.C. 1.

ALL COMMUNICATIONS RELATIVE TO THE BUSINESS SIDE OF THE "VETERINARY RECORD" MUST BE ADDRESSED TO THE GENERAL SECRETARY, N.V.M.A., 10 GRAY'S INN SQUARE, W.C.1.

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